ANALYSIS OF THE MANAGEMENT SITUATION FOR THE ELKO RESOURCE AREA

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INTRODUCTION

Background

The Analysis Management Situation of the AMS is designed to provide the informaion base which will be used to prepare alternatives for the EIS portion of the Resource Management Plan (RMP). The AMS is constrained by planning criteria which were finalized after several months of public comment opportunity and BLM study.

The criteria, or "guidelines", deal with ten significant issues identified for consideration in the Elko RMP. They are based on relevant laws, regulations, and executive orders; national and state BLM director's guidance; public participation and interagency coordination; analyses of available data; and professional judgement. Limiting the scope of the AMS in this manner was done to help ensure the RMP is tailored to only those issues previously identified.

The Elko Resource Area (RA) consists of three planning units -- the North Fork, Buckhorn and Tuscarora. The geographic area, considered a portion of "rural Nevada", consists of approximately 5.32 million acres which make up the western half of Elko County and northern portions of Lander and Eureka counties.

Over 3.2 million of these acres (61 percent) are public lands. They include an approximatley 40-mile-wide band of checkerboard ownership which borders the railroad right-of-way in an east-west direction and roughly bisects the resource area.

The resource area, bordered on the north by Idaho and other BLM districts on the south and west, also adjoins the Humboldt National Forest. Several Indian colonies and reservations fall within or near the resource area.

Using This Document

The AMS consists of two parts -- this document plus a series of overlays. The overlays depict varous resources, e.g., lands available for community expansion and critical wildlife habitat areas, geographically and will be a primary tool for identifying resource conflict areas and developing alternatives.

Thus, the document portion of the AMS alone is incomplete -- it does not attempt to explain at length what the overlays can illustrate. However, it does present valuable background information and lists prioritized management opportunities used in developing alternatives.

The AMS document does stand on its own. However, anyone desiring a complete understanding of the alternatives development process must use it in conjunction with the overlays.

A. LANDS AND REALTY

1. Introduction

Requests have been made by the public to identify lands suitable for disposal through sales, exchanges, and applications under the Recreation and Public Purposes Act within the Elko Resource Area (RA).

a. Planning Question

Which lands should be identified for disposal or retention?

Planning Criteria

1. Public lands will be placed in one of the following categories:

   Category I - Lands which will be retained in Federal ownership and will not be considered for sale.

   Category II - Lands which will be considered for sale, exchange, or applications under the Recreation and Public Purposes Act.

   a) Propose sale of a parcel of land if:

      - the lands are isolated from other public lands and there is no legal access.
      - the lands are needed for community expansion.
      - disposal would serve important public objectives that would outweigh the public objectives and values served by retention.

   b) Consider lands for exchange if the non-Federal offered lands contain resource values, such as important wildlife habitat, recreation potential, or where an exchange would improve grazing management, landownership patterns and resource administration.

2) In identification of lands suitable for community expansion and other public use, the following shall be considered:

   a) Local community expansion and economic development.

   b) Whether the physical capabilities of the public lands are adequate to support actions needed to meet the stated objectives of the community.

2. Current Management Situation

a. Present Conditions and Trends (Physical Profile)

The Elko Resource Area (RA) contains approximately 3,261,780 acres of public land which is administered by the Bureau of Land Management. This acreage amounts to about 61 percent of the total land base in the Elko RA. About 40 percent of the public land base lies within the checkerboard land pattern.

At present, major land actions within the Elko RA include Recreation and Public Purposes (R&PP) leases, exchanges, rights-of-way, and sales. Some agricultural entry applications are also on file. The current demand for utilization of the public lands is centered around the major population centers of Elko and Carlin, mainly in the form of R&PP leases and rights-of-way. While interest in the sale of lands for community expansion has remained moderately high, no lands have recently been sold for that purpose despite the availability of lands identified as such. Land desired for public purposes has generally been acquired through the R&PP process. Some R&PP actions have occurred at existing or proposed recreation areas, while needs for rights-of-way have occurred sporadically throughout the resource area.

The checkerboard land pattern comprises intermingled lands of public and private ownership which makes management difficult and uneconomic for both private landowners and public land managers. As a result, much interest has been shown by private landowners willing to exchange lands within the checkerboard land area. Both the private and public sector benefit when land patterns are blocked in such a way that allows more efficient management for both parties.

The Elko RA is traversed by a number of major transportation and distribution facilities. To date, no utility right-of-way corridors have been formally established. Major distribution and transmission lines and some transportation facilities are anticipated in the future. The establishment of corridors is necessary to provide the private sector secured routes for project planning purposes and to protect resource values from degradation by major rights-of-way proliferation.

In general, major trends reflecting demands for use of the public lands centers around the major population areas. As the communities grow, more lands will be required to accommodate expected population growth. Lands will be acquired for this purpose chiefly through R&PP applications and sales. Rights-of-way applications for energy and transportation purposes will also increase as community expansion progresses. As the population grows, so will the need for areas suitable for recreation, thus increasing the number of R&PP applications

for such purposes. As exchanges are consummated, more private landowners will see the advantages of blocking lands for better utilization, resulting in an increase of applications. As information from the State Water Engineer as to the availability of water for irrigation purposes becomes available, a number of agricultural entry applications will become available for processing. Finally, demands for rights-of-way of various types will occur throughout the resource area as needs become known.

b. Major Mandates and Authorities for Use and Protection

The Federal Land Policy and Management Act (FLPMA) is a Congressional mandate for retention of public land unless, as a result of land use planning, disposal is found to be in the public interest. Public lands are mandated to be managed for multiple use and sustained yield using the interdisciplinary approach, and the United States must receive fair market value for disposed lands and resources. FLPMA authorizes the Secretary of the Interior to sell public lands if

1) the subject land, because of its location or other characteristics, must be difficult and uneconomic to manage as part of the public lands and not be suitable for management by another Federal department or agency; or

2) the subject land was acquired for a specific purpose and is no longer required for that or any other Federal purposes; or

3) disposal of the subject land would serve important public objectives, including, but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in public ownership.

FLPMA also requires inventory of public lands and consideration of socioeconomic factors, as well as coordination with state and local governments prior to sale or disposition of public land.

FLPMA authorizes disposals by means of exchange of public and private lands if it is in the public interest. Regulations implementing this authority are found in Title 43 Code of Federal Regulations (CFR) Subpart 2200.

FLPMA also authorizes the granting of rights-of-way for various transportation, communication, and utility purposes. Holders of right-of-way grants are required to pay rental at fair market value for use of the public lands. Regulations implementing the Act may be found in Title 43 CFR Subpart 2800.

The Desert Land Act of 1877, as amended, provides that up to 320 acres may be disposed of for agricultural development. Lands subject to entry must be (1) susceptible to irrigation; (2) surveyed, unreserved, unappropriated, non-mineral, non-timbered, and without artificial irrigation; and (3) an economic unit. This includes consideration of soil productivity potential and the costs of delivering water to the land. Regulations implementing this act are found in Title 43 CFR subpart 2520.

The following is a list of other mandates that must be considered. A tract of BLM land cannot be disposed of, or otherwise appropriated, unless and until the requirements of most, if not all, of the following mandates are satisfied:

The Antiquities Act of June 8, 1906 (P.L. 59-209) requires preservation of American antiquities and prohibits appropriating, excavating, improving, or destroying any historic or prehistoric ruin or monument or any object of antiquity found on government-owned or controlled land without the permission of the secretary of the department of the government having jurisdiction over the land. Prior to any disposal, an investigation is made to determine the presence or absence of antiquities. The extent and intensity of the investigation by an archaeologist depends upon the suspected values involved.

The Historic Sites Act of August 21, 1935 (P.L. 77-292) and the National Historic Preservation Act of October 15, 1966 (P.L. 89-665) require an investigation of any proposed land sale or use to determine the presence of any sites, buildings, structures or objects of national significance in American history. If there are any such items of significance, they must be preserved and the sale or land use denied if mitigation cannot be satisfactorily accomplished.

The National Environmental Policy Act of 1969 (P.L. 91-190) requires that each Federal action be evaluated to determine if it has major or minor environmental impact. The evaluation considers alternative actions and mitigating measures. Information derived from the evaluation is considered by the Federal manager in arriving at a decision. Where there are significant impacts, environmental impact statements are prepared and published, and a notice is published in the Federal Register.

The Reservoir Salvage Act of 1960 (P.L. 86-523) provides for the preservation of historical and archaeological data (including relics and specimens) which might otherwise be lost as a result of the construction of a dam.

The Endangered Species Act of 1973 (P.L. 93-205) requires that an investigation be made to determine the presence of endangered or threatened fish, wildlife, or plants, and to conserve same. Land disposals or uses cannot be made which would jeopardize the continued existence of endangered or threatened fish, wildlife, or plants.

The Clean Air Act of 1971 (P.L. 91-157) requires the Federal Government to comply with Federal, state, interstate, and local requirements respecting control and abatement of air pollution to the same extent that any person is subject to such requirements. The potential for increased air pollution must be considered in BLM disposal actions prior to making the disposal.

Executive Order 11593, May 13, 1971, titled Protection and Enhancement of the Cultural Environment, sets forth implementing procedures for Federal agencies under the various Historic Sites Acts. It requires consultation with State Historic Preservation Officers, the keeper of the National Register of Historic Places, and the Advisory Council on Historic Preservation, when cultural values of national historic significance are found on lands proposed for disposal. If loss of significant cultural values cannot be mitigated, the lands cannot be transferred from Federal ownership.

Executive Order 11988, May 25, 1977, titled Floodplain Management, requires that Federal agencies reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the floodplains in land transfer actions. An evaluation and public participation procedures must be met before transfer. If a flood hazard exists, either the lands are retained in public ownership, or a stipulation or covenant is included in the grant (lease or patent) to limit the types of uses permitted on the land.

Executive Order 11990, May 24, 1977, titled Protection of Wetlands, details the special considerations to be met when considering actions that may affect wetlands. Conflicts between resource development proposals and other resource values often occur because of the wide range of resources found in these areas. Fisheries, wildlife habitats, and water quality values in wetlands are often threatened by mineral extraction (especially for rock and aggregate), timber production, and road construction activities.

FLPMA disposal actions must also consider the following FLPMA requirements:

- Land Use Planning. Section 102(a)(1) of FLPMA requires that the public lands be retained in Federal ownership unless, as a result of the land use planning procedures provided for in the Act, it is determined that disposal of a particular parcel will serve the national interest. Section 202 of FLPMA describes these planning procedures.

  Decisions to dispose of, or authorize the use of, public lands must be arrived at through FLPMA (the Bureau planning process). Specific parcels of land that will meet important public objectives through lease, permit or disposal are identified in two ways: (1) by BLM planners, and (2) by the public or state or local government officials. Decisions on whether to authorize the use or disposal of such tracts are then made by Bureau field officials.

  Development of new plans, or revision of existing plans, may take from one to two years to complete, depending on the complexity of the issues involved.

- Coordination with State and Local Governments. Section 202 (c)(9) of FLPMA provides for the coordination of BLM land use plans with the land use plans of state and local governments. This coordination requires the consideration of state and local plans and the resolution, to the extent practical, of inconsistencies between Federal and non-Federal government plans, and the involvement of state and local government officials in the development of land use decisions. Where disposal or use of a parcel of public land for a non-BLM program is inconsistent with state or local government plans, significant time may be required to revise such plans; or, the use or disposal may never be authorized if state or local governments are deeply opposed to the use.

- State's Share of Federally Leased Minerals. Section 315 of FLPMA provides that 50 percent of Federally leased minerals shall be paid to the state within which the leased minerals are extracted. The state loses this potential revenue when Federal lands valuable for a leasable mineral are transferred to a non-Federal entity. State governments may oppose such disposals unless the transaction involves a mineral-for-mineral exchange.

- Cancellation of Grazing Leases. Section 402(g) of FLPMA requires a two-year advance notice to a grazing lessee when all or part of the land in his/her lease is to be transferred out of BLM jurisdiction and loss of preference will result. This results in a two-year delay in a disposal that involves a lessee's grazing lease, unless the lessee will waive the two-year notification period.

- BLM Wilderness Study. Section 603(a) of FLPMA established a 15-year period for review of roadless areas of 5,000 acres or more and roadless islands of the public lands identified as having wilderness characteristics. Section 603(c) provides that, during the period of review, the lands shall be managed in a manner that will not impair their suitability for preservation as wilderness.

  Most land uses or land disposals within potential wilderness areas are generally felt to be inconsistent with wilderness preservation. Therefore, decisions on such actions will normally be deferred until after the review period.

The following actions are mandated by procedural requirements:

- Cadastral survey is required before the land can be disposed of.

- In general, land appraisal is required where lands are to be sold, exchanged, or leased.

- Each realty action requires preparation of a land report to summarize findings in supplemental reports, analyze the information gathered, and make a formal recommendation that is consistent with all laws and applicable policies.

- Adjudication is required to protect outstanding third party rights of record prior to issuance of a transfer document (usually a grant) and ensure that the transferee is legally capable of acquiring the land or interest proposed for transfer. If transfer would unduly interfere with valid third party rights, or the proposed transferee is not legally capable of acquiring title, the disposal action terminates.

- Right to protest and appeal involves (1) protests of land decisions dealing with the suitability of the land for transfer out of Federal ownership, and (2) appeals of adjudicative decisions involving a transferee's legal capability to acquire, or valid third party rights in, the land proposed for disposal. Protests are made through the management channels and often end with a decision by the Secretariat. Appeals are taken directly to the Interior Board of Land Appeals. Both protests and appeals can and do delay disposal actions for a year or longer. In some cases, the facts brought out on protest, or legal interpretations on appeal, terminate the disposal action.

- A mineral evaluation is required. Under FLPMA, BLM may dispose of mineral lands; lands no longer have to be determined to be non-mineral in character. Disposals are based on fair market value of the lands, which may include

the mineral estate. All conveyances of title issued by BLM under FLPMA, except those involving land exchanges, reserve all minerals in the lands to the United States. An additional land use management and disposal consideration imposed by FLPMA is that the public lands be managed in a manner which recognizes the nation's need for domestic sources of minerals, including implementation of the Mining and Minerals Policy Act of 1970 as it pertains to the public lands. Therefore, if there are mining claims on the lands, an evaluation of mineral potential is made to determine the best use of the land. If transfer is proposed, the validity of the mining claims must be determined and appropriate action taken (to contest the claims if they are found to be invalid, or to cancel the transfer if claims are found to be valid). Validity determinations and subsequent contests often take years to complete.

- The Sikes Act of 1960, as amended, permits BLM and the state to enter into cooperative agreements involving the public lands for the purposes of wildlife habitat development, utilization, and management. Where such lands are prime habitat lands, disposal considerations must weigh the values that would be lost if the lands were to be disposed of.

- Third party interest and other defects in the title to non-Federal land in an exchange can come to light at all stages of the land exchange process. If a third party interest or other defect is not acceptable to the United States, the land exchange will fail, unless the owner is willing and able to eliminate the interest or defect.

c. Present Management Practices and Effectiveness

All lands actions within the Elko Resource Area are handled on a case-by-case basis. Each land action generally requires the preparation of an environmental assessment/land report prior to authorization of the proposed use. The environmental assessment must comply with the mandates set forth in the National Environmental Policy Act of 1969 (NEPA). The land report addresses land status, land use, planning constraints, and a recommendation and rationale. All proposed actions must be consistent with the completed management framework plans (MFPs) for the resource area. Some major lands actions require review by appropriate state agencies prior to approval. The Nevada State Office of Community Services (State Clearinghouse Program) coordinates the state agencies' review of proposals, as set forth in a memorandum of understanding approved February 6, 1981, by the Bureau and the State Planning Coordinator.

Applications for rights-of-way are the most common type of lands case submitted to the resource area for processing. While most requests are for minor actions, applications are occasionally submitted for major projects, such as high-voltage transmission lines or pipelines. Rights-of-way can generally be authorized on the public lands at any location in the resource area. Exceptions would be wilderness areas or certain withdrawals which preclude rights-of-way. Major facilities, such as transmission lines or pipelines, are generally located in an existing corridor. Rights-of-way applications require preparation of an environmental assessment/land report to address potential impacts and land status.

The primary communications facility within the resource area is located on Elko Mountain, approximately ten miles northeast of Elko. Various users authorized under rights-of-way grants are located here. Major users include Federal, state, and local governments, small commercial users and major communication facilities, including MCI Telecommunications and Western Tele-Communications. At present, the site is approaching capacity and identification of alternate sites should be considered.

Land disposal requests encountered in the resource area include sales, Recreation and Public Purposes (R&PP) applications, and desert land entries (DLEs). All proposals must be consistent with the land use plan with regard to whether the desired lands have been identified as suitable for retention or disposal. All proposals must comply with applicable mandates and authorities which are addressed in the environmental assessment/land report prepared in response to each application.

Land sales are generally initiated by a public with an interest in the desired lands. Reasons for desiring to purchase a parcel of public land may include the need for a homesite, expansion of an existing business or ranching operation, or to legalize an existing unauthorized use. Local governments may desire to purchase "close in" public lands for community expansion purposes. Depending on each situation, a sale may be made directly to the proponent or disposed of by competitive bidding. In accordance with FLPMA, all sales are at no less than fair market value.

Under the R&PP Act, government entities or nonprofit organizations may apply to lease or purchase Federal lands for public or recreational purposes. Authorized uses include schools, parks, churches, sanitary landfills, sewage treatment facilities, and other recreational or public uses. In some cases a special pricing schedule applies which allows the applicant to lease the lands at $0.25 per acre or purchase at $2.50 per acre. The lands are usually leased until developed in accordance with the approved plan and then patented to the lessee.

The Desert Land Act allows an individual to apply for up to 320 acres of public land to develop for irrigated agriculture. Upon timely development of the land (up to four years are generally allowed), in accordance with the approved plan, the lands may be purchased for $1.00 per acre at time of making the final proof. Upon determination of sufficient water available for irrigation by the State Water Engineer, an environmental assessment/land report must be prepared. As of this writing, no DLE applicants have been allowed entry onto public lands in the Elko RA.

A high public interest in exchanges has occurred within the past several years. Land exchanges allow a trade of public and private land in order to provide benefits to both public and private parties. Exchanges are very complex and time consuming, yet offer a good method for blocking public and private lands within the checkerboard land pattern. The exchange should always be in the public interest, and other factors, such as wildlife and recreational values, should take precedence over blocking the lands. The exchange proposal should be consistent with the land use plan. Finally, the proposal must be addressed through the environmental assessment/land report process.

d. Social and Economic Considerations

SOCIAL

One of the lands issues in the resource area concerns the disposal of checkerboard lands. However, the issue remains, as it historically has, as a persistent management problem that is frustrating for BLM employees, as well as those individuals and/or corporations having private landholdings within the checkerboard land patterns. State interest and recognition of the importance of the problem culminated in the 1983 session of the legislature passing a "checkerboard resolution" which proposed that checkerboard lands be sold to the State of Nevada for subsequent sale as the state sees fit. Revenues from the sale of those checkerboard lands would have been channeled into improving railroad grade crossings throughout the state. This approach to resolving the checkerboard problem was developed by an Elko resident, i.e., Mark Chilton of Chilton Engineering. This is but one of a number of proposals that has been suggested over the years to resolve a persistent land management problem that remains an individual and community irritant. These lands have been repeatedly identified for disposal by local citizens as one method of improving landownership patterns.

There is still some support among the public within the resource area for the "Sagebrush Rebellion" -- a controversy that centered around the notion pursued both through the forum of public opinion and the legal system that the State of Nevada had not been treated on an equal basis with other states upon

entry into the Union as far as state title to Federal lands within state boundaries was concerned. In support of this, a coalition of diverse interest groups and political figures evolved and sought to gain support for their perception that Federal lands administered by, the Bureau of Land Management within the State of Nevada should belong to, and be administered by the state. This movement became highly visible, polarized, and politicized nationwide, with the then-Presidential candidate Ronald Reagan standing solidly behind the movement.

With the advent of the Asset Management Program, developed by the Bureau in response to directives from the then-Secretary of Interior James Watt, a significant softening of this hard-line attitude in support of selling of the Federal lands within Nevada became evident. As Westerners became aware of the implications of this accelerated land sale program, i.e., sales to the highest bidder, among others, a sense of uncertainity became evident, and support for the program began to wane. Although support for land sales and exchanges still exists in the resource area, there appears to be considerably less support for an accelerated lands disposal program of the magnitude proposed under the Asset Management Program scenario.

A legal issue currently in litigation that could have a significant impact on land resources concerns the issue of Western Shoshone National Council and its constituent tribal entities' claim of title to lands within the resource area (United States v. Dann, 706 F2d 919, 9th Cir., 1983).

Should this claim be upheld in court and through the subsequent appeal process, large tracts of lands covering approximately 60 percent of the resource area could potentially pass to the control of the Western Shoshone National Council and its constitutent tribal entities, thereby reducing dramatically BLM's responsibility, as well as accountability, for management of natural resources in those areas.

ECONOMIC

Potential changes in the proportion of private to public lands would affect both the tax base and Bureau of Land Management payments to the counties in lieu of property taxes. With 2,957,614 acres on the tax rolls (26.9% of total county acreage), assessed valuation for Elko County in fiscal year 1983 amounted to $245,730,895. Property tax revenues were approximately $2.9 million.

BLM payments in lieu of property taxes for fiscal year 1983 amounted to $464,554.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present Demands

Except in areas in close proximity to urban populations, demands for disposal of public lands are relatively low. The majority of applications in this respect are under the Recreation and Public Purposes (R&PP) Act which allows disposal of lands for public use at very low cost. Facilities qualifying for special pricing include public health and education facilities and law enforcement establishments (e.g., correctional institutions). Some interest has been expressed by government entities in purchasing lands for urban expansion, but no disposals of this nature have been completed to date. However, local governments have identified lands they may wish to purchase at a later date and requested that these lands be reserved for this purpose.

Presently, the City of Elko has been disposing of some city-owned lands for residential and commercial uses. Approximately 94 acres have been disposed of within the past year; however, annual disposals of smaller acreages are expected to be the trend in the future. Approximately 600 acres of city-owned land remain available for disposal (personal communication, office of the city manager). At some future date, these city-owned lands will have been disposed of, and Federal lands will become desirable for urban expansion purposes.

Currently, only applications from government entities for R&PP leases within and adjacent to the City of Elko are on file in the resource area.

The lack of interest in land disposals may be attributed to several factors, including a feeling that land sale procedures are long-term bureaucratic affairs involving considerably more time than equivalent private situations and the fact that large-scale purchases of land are generally economically infeasible for many in the ranching community.

Much more interest has been shown in utilization of land exchanges to consolidate public and private lands. Two exchanges are currently being processed which, if consummated, would allow the Bureau to acquire private lands on the east slope of the Adobe Range that contain demonstrated wildlife values and recreation potential. Public lands to be exchanged have no significant resource values and will improve range management techniques for the proponent.

Interest has been shown in obtaining land for agricultural entry under the Desert Land Act. At present, approximately 50 applications are on hand in the resource area (a majority of which are located in the Lamoille Hydrographic Basin). No entries have yet been allowed, pending information from the

Nevada State Water Engineer indicating how much water is available within each hydrographic basin for irrigated agriculture. It is likely that most applications will be rejected, as water will be available for only a very few entries. Few new applications are anticipated, as most suitable ground has been previously filed upon.

b. Opportunities to Meet National and State Director Goals and Resolve Planning Issues and Management Concerns

The Federal Land Policy and Management Act (FLPMA) has mandated that Federal land be held in public ownership for multiple use management unless identified for disposal by the land planning process. Land identified in the RMP as suitable for disposal will be made available for that purpose if determined to be in the public interest, pending environmental assessment/land report analysis.

The disposal of isolated parcels and lands adjacent to the community for urban expansion, as identified in the RMP, will satisfy the intent of FLPMA and the State Director. The economic benefit of proposed disposal actions to the local communities could be great. Priority must be given to evaluation and processing of these applications that carry the greatest potential to benefit the local or regional economies. Some of those benefits would be to make property assets available for local economic development and homesites and to increase the local tax base. Additionally, disposal of public lands would reduce to a limited degree, Federal property management costs and lead to a more efficient and economical management effort.

c. Future Demands and the Capability to Meet Them

The population of Elko County is expected to increase from 20,960 (in 1983) to 36,594 (a 75 percent increase) by the year 2000 (Nevada Review of Business Economics, Spring 1984). Such significant growth will place demands on the availability of land for residential and commercial use within population centers of the resource area.

Available vacant private lands should accommodate the anticipated growth for the next ten years. However, this could change if a large project (such as a power plant) is constructed on available private land. It should be emphasized that available private land may not be suitable for certain uses for which some parcel of public land may be better suited, and isolated parcels of public land may constrain the use of adjacent private land. Such a determination can be made only after a detailed, site-specific analysis.

Previous discussions with officials in the cities of Elko and Carlin have resulted in certain parcels of land being identified as desirable for community expansion. These lands include all public land within the Elko Township (T. 34 N., R. 55 E.) and most public land within the Carlin city limits (see Map ___). Carlin also wishes that public lands northwest of the city, containing a culinary watershed, be protected from excessive surface disturbance. As these are major population centers in the resource area, it is anticipated that at least some of the lands identified for community expansion will be used for that purpose.

The remaining urban areas of significance in the resource area include Battle Mountain, Tuscarora, Beowawe, and Crescent Valley. The small unincorporated villages have not identified desired public lands for expansion purposes, and it is assumed that available private lands are adequate for this purpose. The majority of growth in this area is not expected to occur in these locations (but will be expected to occur in Elko, Spring Creek, and Carlin).

Consultation with officials representing the three counties located within the resource area has indicated that public lands should be available for future sanitary landfills, sewage treatment facilities, potential recreation sites, and material sites. It was also indicated by Elko County that exchanges should be utilized to block private and public lands within the checkerboard land pattern.

Sales of isolated parcels of land are initiated at an interested party's request. Demand for sales of this type are low and it is expected that this will remain the case. Sale of an isolated parcel is complicated if a parcel is not completely surrounded by land owned by the individual or if there is legal access to the parcel. If this is the case, than public bidding procedures are indicated which tend to limit potential buyers.

Interest in exchanges continues to grow, especially if exchanges currently being processed are consummated. This will result in an increased public awareness that such actions are available for land tenure adjustment. The process remains the most desirable way to block lands within the checkerboard land pattern; however, the complexity of the casework and limited staffing of realty personnel will hinder the completion of land exchanges.

Interest in desert land entries will lessen as hydrographic basins are closed to entry and the most desirable lands are placed under application. It is expected that the present caseload will eventually be processed and very few, if any, new applications will be submitted.

d. Constraints on Management to Avoid Undesirable Irreversible Commitments of Resources

None.

e. Consistency with Non-Bureau Plans

All land disposals are presently screened by the planning commission of the respective county where the proposed action is located. Large disposal actions are submitted to the Nevada State Office of Community Services for distribution to agencies which may wish an opportunity to comment on the action.

The State of Nevada is presently engaged in preparing master plans for each county under the authority of Nevada Senate Bill 40. Public meetings will be held in each county to determine respective needs of the county in regard to all phases of county planning. As each county master plan is completed, every effort will be made to coordinate proposed land disposals to ensure that the action is in compliance with that plan.

Coordination with other Federal agencies, e.g., U.S. Forest Service (USFS), is on a case-by-case basis and is subject to the same regulations. Potential exists for exchanges among the USFS, a private proponent, and BLM.

f. Critical Threshold Levels

None.

4. Additional Management Concerns

None.

5. Opportunities for Changes in Management Practices

None.

B. CORRIDORS

1. Introduction

The opportunity exists for formal designation of utility corridors under the authority of Section 503 of FLPMA and in accordance with the Western Regional Corridor Study prepared by the Western Utility Group. Such designation could serve to minimize width requirements for rights-of-way and maximize multiple occupancy. Therefore, the suitability of lands to accommodate future utility corridors needs to be addressed.

a. Planning Question

What areas should be recommended for utility corridors?

Planning Criteria

1) Designate corridors for major facilities in areas that meet the following criteria:

   a) Have existing major facilities,

   b) Have been identified by the Western Regional Corridor Study for a potential corridor,

   c) Are technically and economically suited for such uses,

   d) Correspond with designated corridors in other planning areas, and

   e) Do not have significant resource values that would be adversely impacted. Areas having significant values could include lands with wilderness potential, Areas of Critical Environmental Concern designation, and/or threatened or endangered species habitat.

2) Give priority to corridor designation in the following order:

   a) Use existing transmission line rights-of-way with sufficient width to upgrade existing facilities and permit further expansion.

   b) Follow existing secondary highways and railroads, if technically or economically feasible.

3) Identify planning corridors in areas with no major facilities that meet the following criteria:

   a) A need is demonstrated to place a facility within a certain area, and

b) Identify land areas suitable for future corridors in accordance with the Western Regional Corridor Study. The width, location, and number may vary according to need. The corridors may specify a particular width or may designate a beginning and ending point with approximate route.

2. Current Management Situation

a. Present Conditions and Trends (Physical Profile)

The continued growth of urban areas located within the resource area has resulted in the construction of high-voltage transmission lines to provide energy in support of the increased population. In 1982, a 120 KV transmission line was constructed by Sierra Pacific Power Co. from the Humboldt Substation to Elko in order to provide a reliable source of electricity to the community. In the fall of 1984, a 120 KV line will be constructed by Wells Rural Electric Co. to provide a second source of power to the community of Carlin and the Carlin Gold Mining Co.

Proposed transmission lines include a second 120 KV line, to be constructed by Sierra Pacific Power Co., which would parallel the existing line from the Humboldt Substation to the City of Elko. No date has been identified at this time for construction of this project. Also proposed by Wells Rural Electric Co. is an upgrade of an existing line which presently supplies power from Elko to the Jiggs area.

The Western Utility Group, an ad hoc committee of investor-owned utilities, has provided a base study on utility and transportation corridors. As a result of this study, five main corridors were identified as sufficient for needs until 1990. Three of these corridors are presently being utilized. Corridors running from east to west include the Interstate 80 corridor which contains Interstate 80, the Western Pacific and Southern Pacific Railroads, the Southwest Gas pipeline, and the 120 KV line to be constructed in 1984. The other identified east-west corridor presently contains the AT&T transcontinental telephone cable and the Oreana-Hunt 345 KV transmission line. A north-south corridor, as identified in the corridor study, is partially utilized by the Elko Second Source 120 KV line. The two remaining north-south corridors have not been utilized for major projects.

b. Mandates and Authorities for Use and Protection

As discussed earlier in the lands section, Section 503 of FLPMA authorizes designation of right-of-way corridors and restricts such designation with requirements for multiple use management and sustained yield. In Section 102(a)(2) FLPMA mandates periodic inventories of public lands, public involvement in

land management planning, and coordination with other agencies. Section 202(c)(9) of FLPMA requires consideration of state and local plans and involvement of state and local officials in land use decisions.

The Mineral Leasing Act of 1920 provides for the leasing of Federally-owned oil and gas and issuance of rights-of-way for their transportation. BLM regulations found in Title 43 of the Code of Federal Regulations, Subpart 2800 (43 CFR 2800) provide the mechanism for issuing right-of-way grants under this act.

Interstate pipelines for petroleum and other liquid products are regulated by the Federal government through the Interstate Commerce Commission as a result of the Hepburn Act of 1906, which extended the earlier Interstate Commerce Act.

The Federal Energy Regulatory Commission (FERC) was created when the Federal Power Commission was dissolved. FERC has taken over the responsibilities of the former Federal Power Commission, including the authority over licensing of power transmission lines within FERC's jurisdiction. Under the Natural Gas Act, FERC is also charged with authority over licensing of the construction and operation of interstate natural gas pipelines.

The National Environmental Policy Act (NEPA) of 1969, Public Law (P.L.) 91-190, requires that each Federal action be evaluated to determine if it has major or minor environmental impact. The evaluation considers alternative actions and mitigating measures. Information derived from the evaluation is considered by the Federal manager in arriving at a decision. Where there are significant impacts, environmental impact statements are prepared and published and a notice is published in the Federal Register.

c. Present Management Practices and Effectiveness

At present, requests for rights-of-way for utility and transportation purposes are handled on a case-by-case basis. When feasible, rights-of-way are located next to existing facilities for ease of access and visual management purposes.

The existing land use plans presently allow for placement of rights-of-way to individual users without restriction anywhere within the resource area. Overlays prepared for the existing MFPs show identified corridors; however, these generally follow existing highways. Other corridors identified by the land use plans have not been utilized and do not correspond with those identified by the Western Utility Group Corridor Committee.

Identification and utilization of major rights-of-way corridors would have the effect of limiting to specified areas impacts associated with construction of major linear rights-of-way.

Mitigation could limit impacts to acceptable levels and could lessen costs to both Federal and private sectors in future actions within the same area.

d. Social and Economic Considerations

SOCIAL

There is strong support from the utilities sector for making utility corridor planning a key issue in the development of the Elko Resource Area RMP. Their rationale is that long-range planning indicates that as existing corridors become filled, transportation and utility corridors within the resource area will become a vital link between the resources in the Intermountain West and the load center in the West. Washington Office Instruction Memorandum No. 83-738 of July 12, 1983, Subject: Bureau of Land Management (BLM) Use of May 1980 Western Regional Corridor Study, states "before the BLM makes any land use or management decision, the present and/or possible need for use of the land for right-of-way purposes must be evaluated. In other words, where the study indicates an existing or proposed corridor, this right-of-way use must be considered in the process leading up to the land use decision." Other than strong support from the utilities sector and concern on the part of BLM management personnel, there has been little public interest generated by this issue among area residents or from other sources external to the resource area.

ECONOMIC

The designation of corridors will purportedly enable more efficient planning of future energy, communication, and transportation facilities.

The lack of designated corridors sustains high planning costs to utility companies and results in longer processing time for right-of-way applications. However, utility construction and operating costs can be minimized since there are no designated corridors and no restriction of opportunities to develop the shortest right-of-way possible.

There is no clear evidence that long-term land values are affected by placement of transmission lines (Holberger, et. al., 1975).

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present Demands

Present demands for major transmission line rights-of-way are moderately high and are expected to remain so for the next 20-year period as growth in the area continues. A second 120 KV line paralleling the existing Elko Second Source facility is expected to materialize, as well as several upgrades of existing lines into southern portions of the resource area.

Also under consideration is a major intertie between the Pacific Northwest and Southwest. One option being considered would follow the proposed corridor presently occupied by the Oreana-Hunt 345 KV line.

As the major proposals lie within corridors identified by the Western Utilities Corridor Committee, no conflicts are anticipated. Officially designated corridors will restrict proposed and future major facilities, thus making it less difficult for land managers to anticipate and mitigate adverse impacts.

b. Opportunities to Meet National and State Director Goals and Resolve Planning Issues and Management Concerns

National concern for meeting future right-of-way needs while protecting the environment led to legislation authorizing Federal land management agencies to designate utility and transportation corridors on Federal lands. FLPMA and the 1920 Mineral Leasing Act, as amended, give BLM this authority and, although corridors are encouraged by law, a designated corridor would not preclude granting a separate right-of-way where deemed appropriate by a Federal agency (Breuninger, et al., 1981).

Currently, BLM managers make corridor-related decisions for individual projects over which they have authority. In areas without specifically designated corridors, managers must determine what present and future impacts a major project would have on existing resources, with the knowledge that authorization of the project could have the effect of establishing a de facto corridor in that particular location.

To aid the manager in the decision-making process, guidance on corridor designation (Washington Office Instruction Memorandum No. 83-738 and Nevada State Office Instruction Memorandum No. NV-83-83) has indicated that the Western Regional Corridor Study should be utilized as a guide when identifying corridors and that locations with existing major rights-of-way that have potential for expansion should be identified as corridors. Planning corridors with no existing facilities may be identified in the RMP.

At present, the Western Utility Corridor Committee report presents the definitive study for corridor designation in the resource area. Acceptance and utilization of the suggested corridors would provide the most efficient method for containing major rights-of-way anticipated for the planning period.

c. Future Demands and the Capability to Meet Them

Due to the projected continued demand for major linear rights-of-way for the planning period, designation of corridors is essential to the RMP process. Lack of designated corridors could result in a proliferation of rights-of-way adversely affecting other existing resources. Problems resulting from this situation would likely be compounded as future rights-of-way affecting those previously constructed projects are granted.

d. Constraints on the Location of Future Utility Corridors

None.

e. Consistency with Non-Bureau Plans

Any right-of-way application must first be screened by the Elko County Planning Commission prior to approval. Major facilities are generally reviewed by various state agencies via the Nevada State Office of Community Services to obtain comments regarding impacts on respective resources.

f. Critical Threshold Levels

None.

4. Additional Management Concerns

None.

5. Opportunities for Changes in Management Practices

None.

C. LEGAL ACCESS

1. Introduction

Legal access is defined as the lawful right to ingress (to enter) or egress (to leave) a parcel of land. Neither BLM nor the public has an inherent right of legal access to public lands over private property. However, legal access to public lands is available via adjacent existing public roads or trails, as well as from roads or trails that cross private property for which legal access has been acquired. As populations, recreation use, and mining activities increase, additional legal access problems could occur.

a. Planning Question

Where is legal access needed to facilitate resource management and public uses?

Planning Criteria

1) Select roads and trails for inclusion in the transportation system according to:

   a) Type and frequency of historical use,

   b) Number of routes serving common purposes, origins, and/or destinations,

   c) Identified public needs,

   d) Management requirements, and

   e) Coordination with other Federal agencies, state, county, local governments, Indian tribes, and affected private land owners.

2) Establish priorities for legal access acquisition on the basis of identified public and management needs.

2. Current Management Situation

a. Present Conditions and Trends

Each year brings in more requests from the public for legal access to government lands, as the private landowners control these lands by denying access across their own lands. The BLM needs easements for roads crossing private lands to justify the expenditure of funds for maintenance and repair of these roads.

Because of the lack of personnel and funds needed to do a complete inventory of the Elko Resource Area, planning for the acquisition of easements for public access will be limited in scope. It is planned that this analysis will:

1) Identify access needs, as requested by the general public.

2) Identify access needs of other governmental agencies over roads on the BLM road transportation plan.

3) Identify access needs of the BLM for different purposes: recreation, range, wildlife, woodland products, repair and maintenance, and management.

4) Decide the appropriateness of the need and assign priority status.

A brief description of landownership and its relationship to roads and government lands will show the importance of the acquisition of easements over private lands.

The center part of the Elko RA is a 26-mile-wide strip of checkerboard ownership which resulted from the railroads locating in this area. A large part of the Elko RA is either a solid block of BLM, USFS, Indian Reservations or privately-owned lands. The balance of the Elko RA is BLM-administered lands interspersed by private lands generally following streams or rivers and patented mining claims. Most roads constructed in the Elko RA were built for the private landowners; that is, the road started from a public road and crossed private land to a ranch, home, or mining claim. The road then crossed public lands until another private holding was reached. The fact that most of the roads were built along water drainages, with this land being in private ownership, left very little public lands with legal access for any purpose.

In many cases, the private landowners are able to control the use of the BLM-administered lands by the public by denying access across their own lands. This denial of access is based on:

1) The BLM land is "tied" to the private landholdings under grazing leases, for the private landowners' use and control. Some private landowners have posted "No Trespassing" signs on Federal lands.

2) The practice of leasing private lands as "hunting club" is enhanced if there are large areas of Federal lands available for hunting that non-member hunters cannot use because of the lack of legal access.

3) An increased urban population with a desire to use the public lands is inducing the rancher to keep them off the land by posting "No Trespassing" signs. This is in an effort to decrease problems to the rancher in relation to having gates left open, shot or harassed livestock, stuck vehicles, torn up roads, and other problems.

4) They improve the wildlife population on the area by denying access to hunters.

There have been some road easements acquired to enable the BLM to perform maintenance and repairs to existing roads. No legal access easements for new roads have been acquired to date.

There are several areas that need easements for different reasons. The RMP will identify the specific needs and priority of each.

b. Mandates and Authorities for Use and Protection

All easement acquisitions are authorized by the Acts of June 28, 1934 (43 U.S.C. 315, et. seq.), as amended, April 27, 1935 (16 U.S.C. 590a), July 14, 1952 (U.S.C. 1651), July 14, 1960 (74 Stat. 506; 43 U.S.C. 1364), and October 21, 1976 (43 U.S.C. 1701 et. seq.), as amended (FLPMA).

FLPMA is a Congressional mandate for the retention and management of public lands. Part of managing the lands is the ability of acquiring access over Non-Federal lands to public lands by purchase, exchange, donation, or eminent domain.

The Act of July 14, 1960 authorizes the acceptance of gifts of land for the improvement, management, use, and protection of the public lands and their resources.

The Act of July 14, 1952 authorizes whatever measures needed for the eradication and control of Halogeton glomeratus on lands of the United States. The Act of April 27, 1935 authorized the acquiring of lands, or rights or interests therein, by purchase, gift, condemnation, or otherwise when necessary. The Act of June 28, 1934 authorizes the BLM to accept any lands within or outside the exterior boundaries of a grazing district as a gift and is not restricted from taking necessary action in the acquisition of rights-of-way.

The policy of the BLM is to acquire perpetual rights needed to manage, protect, maintain, and use public lands and the further right to provide access for public use and enjoyment of such lands with outdoor recreation value.

c. Present Management Practices and Effectiveness

Currently, all access acquisitions have been proposed on a case-by-case basis. This has usually been in crisis situations. An easement is needed so the BLM can build a bridge or maintain a road. A road easement inventory, per BLM manual, has not been completed which could give basic information to the manager for needed acquisition.

With the RMP in the offing, there has been very little action toward acquiring access easements. There are many areas in need of access acquisition all over the Elko RA, as identified by different government entities and publics.

d. Social and Economic Considerations

SOCIAL

This issue surfaces most frequently in connection with any proposed plan that either disposes of or places constraints on the historic uses of public lands. The feeling that unrestricted access to public lands is an inalienable right is so strong that it is not uncommon to hear the opinion voiced that access should not only be permitted but should be guaranteed across private property if such is necessary to gain access to public lands. Those who depend on the public lands for their livelihood, ranchers and miners in particular, support this concept but have expressed some concerns that provision must be made in those situations to protect their private rights and property.

ECONOMIC

While access is of significant importance to BLM in order to exercise proper management of the public lands, and to the public for recreation use and mineral exploration, there is little or no significance to the area economy other than the questions of road maintenance and land values.

Presently, the only access to checkerboard lands is via public ways or historical use. BLM bears the cost for maintenance and improvement of roads and ways which provide rights-of-ways or easements for access. The county provides services on those roads which do not provide access to public lands. The effect on the local economy is moot. It is simply a question of the source of funding.

Where access for recreation is restricted, recreation activities are not discouraged but only displaced to other, more accommodating locations in the area. While some mineral exploration may be precluded by lack of access, the foregone exploration costs, as well as the economic potential, are indeterminable.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present Demands

The present demand for legal access across private lands to public lands is related mainly to BLM's need for management purposes (range, woodland products and maintenance). Recreation access for the public is the chief non-BLM need, with

mining being a close second. The dominant need for the BLM is legal access of roads across private lands which would allow us to legally maintain these roads in their entirety. There are approximately 240 miles of private roads which need to be legally acquired for maintenance purposes. The acquisition of legal access for maintenance, in most cases, duplicates needs for other uses. The only exception is the acquisition of land for new roads which will be added to the maintenance schedule upon a road being constructed.

The most urgent legal access demands are for recreation and mining. The acquisition of road easement for maintenance purposes is an on-going program. With the level of funding in the District, the present demands cannot be met.

b. Opportunities to Meet National and State Director Goals and Resolve Planning Issues and Management Concerns

The policy of the BLM is to acquire rights needed to manage, protect, develop, maintain, and use public lands and the further right to provide access for public use and enjoyment of such lands with outdoor recreation value. This is a national goal which has been reaffirmed by the State Director.

The access acquisition issue is an integral part of the current RMP process because of its local importance both for the public and the BLM.

The initial step for this issue will be the acquisition of easements needed to provide legal access not now available for the BLM and the public to public lands. This would involve eight specific sites. The constraints on these acquisitions would be the listing of priority of each individual easement and the funding level of the program.

c. Future Demands and the Capability to Meet Them

With a projected increase in the population of Nevada, there will be an increased demand for access to public lands in connection with increased recreational opportunities.

Hunting - Deer hunting will most likely stay about the same. The number of tags issued probably will not change much but mining activities will cause the relocation of hunting pressure. Antelope hunting will not change much. Chukar hunting will increase with the increase in number of birds available. Waterfowl hunting will increase below the planned South Fork Dam.

Fishing - Increased fishing is expected below the planned South Fork Dam, accessible across public lands.

Mining - There are areas in the Elko Resource Area that are producing large amounts of gold and other economically desirable minerals. There is an expressed need by mining interests to cross private lands to reach public lands which are mineralized. This need for access is expected to increase.

Other outdoor uses will increase with the increase in population, as these types of recreational needs are needed where recreational opportunities are few in the metropolitan areas. Elko, Carlin and Spring Creek are prime examples of this recreational opportunity need. The area is even impacted by the population from the Reno-Sparks area and even, to a degree, by California residents. They all want this type of experience and think nothing of traveling to where they can have it. As more and more of the population seek to use the public lands, more conflicts will occur between them and the private landowners for access. The population forecasts show the projected population increase that will create this problem. The lengthy procedure in acquiring legal access is a hindrance in solving problem areas. Potential problem areas should be identified and preliminary work initiated as quickly as possible (example: access to area below South Fork Dam).

d. Constraints on Management to Avoid Undesirable Irreversible Commitments

None.

e. Consistency with Non-Bureau Plans

All three counties - Elko, Eureka and Lander - have master plans. The proposed easement acquisition program is not in conflict with these plans. Identified easements to be acquired have been coordinated with other governmental entities, and none are in conflict with their plans. BLM is in direct conflict with the landowners located north of Carlin. The present landholders are effectively tying up public lands by denying access or charging crossing fees to users.

f. Critical Threshold Levels

Information is not available to determine critical threshold levels.

4. Additional Management Concerns

In some areas, the landownership pattern is disjointed into numerous small parcels owned by many different individuals, who are generally absentee landowners. Acquiring easements across these small landholdings can, and probably will, require considerable time. The potential exists for owner refusals of access, which may then require condemnation procedures.

5. Opportunities for Changes in Management Practices

Opportunities for changes in management practices could occur if additional funding of the program were to become available. This would allow management to initiate acquisition of road easements to serve the greatest public needs.

D. RECREATION

1. Introduction

The Elko Resource Area offers a variety of recreation opportunities and is used increasingly for recreation by both local communities and nonlocal sources. The nearest metropolitan areas of Salt Lake City, Reno and Las Vegas are expected to continue their population growth, creating the potential of greater recreational demands within the resource area. With a higher level of use comes the potential for impairment of other resource values.

a. Planning Question

What areas will be open to off-road vehicle (ORV) use?

Planning Criteria

1) Identify areas of public land that will be designated as open, limited or closed to off-road vehicles.

2) Off-road vehicle designations will consider protection of resource values such as crucial wildlife habitat, riparian areas, cultural or historical sites, watershed stability, potential wilderness areas, areas of conflicting uses, areas of critical environmental concern, visual quality and other values and users.

3) Restrictions will be the least necessary to satisfy identified concerns. Restricted or closed vehicle areas will be identified on public maps or by site-specific signs.

b. Planning Question

Other than extensive recreation use areas, how will recreation areas be designated and managed?

Planning Criteria

1) Recreation areas will be designated as developed special recreation management areas (SRMAs) enhanced SRMAs, or developed recreation sites.

2) The intensity of management actions for each designation will vary. Management of a designated recreation area will be based on the parameters of carrying capacity, Recreation Opportunity Spectrum (ROS) Classes, resource protection and user safety. Management goals will be to provide quality wildland recreation experiences suitable to the resources and complimentary to other programs and agencies.

2. Current Management Situation

a. Present Conditions and Trends (Physical Profile)

The Elko Resource Area is neither surveyed nor classified according to the Recreation Opportunity Spectrum (ROS) Classes. Professional firsthand knowledge of the area, excluding the U.S. Forest Service lands, would judge the area to be divided mostly into the semi-primitive motorized and roaded-natural classes for recreation opportunities. The majority of current recreational demand, reservoir fishing and hunting, easily fall within these opportunity classes.

The Elko Resource Area services two distinct recreation populations with high quality recreation. The use is almost evenly divided at the current time. The local users include those that live within the area and several nearby small towns. These tend to be younger, account for much of the day use and two to three-day visits, engage in slightly more varied activities, utilize developed facilities less, and object more to user fees and regulations.

With the Elko area being centrally located between Las Vegas, and Boise, Reno and Salt Lake City, it is within a day's driving time of each major metropolitan area and two day's driving time of much of California. Recreation users from these areas account for mostly the other half of the area's recreation use. This population tends to be older, stay a week to six weeks, utilize developed facilities, are accustomed to being regulated, but bring urban values to a rural region.

The area has a history of quality hunting and fishing with an outstanding success rate. Lake fishing accounts for the majority of fishing pressure. Wilson and Wildhorse Reservoirs, the two major bodies of water within the resource area, absorb most of the pressure. These two reservoirs also provide substantially all of the winter ice fishing opportunities for the state.

Zunino reservoir, a much smaller body of water, sustains considerable day use from the local population on a year-round basis. These three reservoirs are the location of the only Bureau-developed recreation facilities within the resource area.

Due to a variety of factors, these reservoirs provide very light use for water skiing and swimming. They provide fair to good waterfowl hunting.

With about half of the state's deer population and the fall in-migration towards the deer wintering ranges, this area provides excellent deer hunting opportunities. Most deer hunters are widely dispersed among the accessible areas. Many camps are located along streams with tree cover. Most ranches "close-up" for the deer hunting season. Very few participate

in any commercial hunting camps or access-fee ventures. A handful are involved in legal outfitting and guiding services. Several more are "pirate" outfitters.

Deer season is a "holiday time" in Elko County. Thousands of vehicles converge on Elko, cluttering streets and parking lots. Money flows into grocery stores, gas stations, restaurants and all other types of businesses. The vehicles include recreational vehicles, off-road vehicles, horse trailers, buses, and others which clog the roads leading to the the far corners of the area. All the major mountain ranges are popular for deer hunting. While some of these ranges are within U.S. Forest Service (USFS) boundaries, hunting, access, and camping occur on BLM lands. Estimating hunting use which occurs on BLM or USFS lands is very complicated because of this. While the majority of big game hunters are dispersed campers, they utilize camping sites situated anywhere near accessible hunting areas. During early season storms, use within the campgrounds increases. Dispersed hunter camps can be found almost everywhere. Aspen stands near water with mountain access are the most desirable, resulting in crowded large encampments. Camps are found along trails and water even in lowland scrub pinyon-juniper stands. Latecomers often find only harsh dry-camps in the flats and valley bottoms. New hunters to the area are camped on the better known public dirt roads. Hunting from and with vehicles accounts for much of the hunter-days. Because of the checkerboard pattern of land-ownership and "strip ownership" along creeks and at the foot of the mountains, access to the desirable dispersed camp areas is often restricted.

The resource area is an important sagehen hunting area, with BLM lands accounting for the majority of hunting sites. Access and camping sites are less of a constraint than with deer hunting but still a major problem.

Other upland bird hunting is very good quality hunting for chukar but is only fair for quail. The majority of hunters for these are local. Waterfowl hunting is excellent, especially for geese, with most of the pressure coming from regional hunters.

Furbearers taken by hunting and trapping is a somewhat commercial activity but is predominantly recreational, as the activity is sustained even when there are very low pelt prices. Local hunters are often summer seasonal workers seeking outdoor winter activity. Most trapping occurs on BLM land.

Cottontail rabbits, doves, partridges, and other grouse are local popular species of game.

Other hunting activities include hunting for mountain lions, antelope, various predators, squirrels, jack rabbits and others. These activities are dispersed, with some use by local hunters on public lands.

Stream fishing is experiencing very light recreational use. A number of factors contribute to this which include access problems, landownership, lack of information, limited desirable campsites, competing uses, and some deteriorated condition streams.

Harvesting of woodland products, while primarily a subsistence-related activity, is often observed in the field as involving a variety of related recreation activities. The activity commonly involves four to six hours of time for driving and cutting and is a family activity involving one to three families who combine sightseeing, picnicking, target shooting, taking pictures, collecting rocks and other activities. This often is a day-long event, with a fourth of the day spent in recreational activities. With approximately 19,485 wood cutter-days, this equals about 4,871 recreation user-days annually from wood harvesting. Christmas tree cutting is entirely recreational in nature and contributes 3,880 user-days in the Elko Resource Area.

The State of Nevada has initiated the creation of the South Fork Reservoir ten air-miles south of Elko. This 1,650 surface-acre recreation reservoir will be operated by the Nevada Division of State Parks. The reservoir and 2,067-acre area on the South Fork of the Humboldt River will have major impact on recreation use of the area. These area has been mostly private lands not available for recreational use in the past. Checkerboard landownership of surrounding lands has had light dispersed recreational use historically. With the completion of the reservoir, spin-off activities not provided within the highly developed park, such as firewood collecting, off-road vehicle play, and dispersed camping, will impact the nearby public lands. With the change in water quality, flow rates, and attention attracted to the reservoir, the South Fork below the dam and the Humboldt River will have new opportunities for fishing, rafting, swimming, off-road trails, hiking, wildlife observation and hunting. This area is a major raptor nesting area and contains National Register of Historic Places quality prehistoric and historic cultural sites and trails.

The Elko Resource Area also contains the nationally significant Tosawihi Quarry. This public land prehistoric quarry is one of only three such sources in the nation of this much-prized source material for creating arrowheads and related implements. The other two sources are on private lands. Management and collection of this material is currently uncontrolled.

The Elko District contains many lightly visited historic areas, the majority of which are on public lands. These include many ghost towns and mining camps dating from the latter half of the 1800s to the early 1930s, 34 known cemeteries, 13 isolated grave sites, wagon and stage trails, two old army forts, and Chinese railroad camps.

Equestrian use or horseback riding for pleasure on public land is a very popular use among the local population. Recreational horse use for hunting is increasing rapidly among all user groups. The county contains approximately 1,785 pleasure riding horses, with the average rider riding 39 days a year for about 69,607 annual days of equestrian riding. The county contains many miles of combination horseback/hiking trails. Most of these trails are located within the high country of the U.S. Forest Service lands and are useful primarily during the summer and fall months.

Commercial-competitive recreation, excluding hunting guides, have been limited to local groups promoting shooting events and fishing tournaments for profit. About three commercial whitewater launches a year occur on the South Fork of the Owyhee River.

The Elko Resource Area has few organized off-road vehicle (ORV) groups. These groups are comprised of two motorcycle clubs and a snowmobile club. Off-road use is common among most recreationists and ranchers in order to reach distant sites via primitive roads. With the exception of hill climbing near Elko, four-wheel drive use is generally well dispersed, with the majority being hunting-related. Snowmobiles are generally used on the U.S. Forest Service lands. Some oversnow snowmobile use occurs on public and private lands along the Adobe Range, around Wildhorse Reservoir, Emigrant Summit and the Taylor Canyon areas. The Elko area has approximately 439 off-road motorcycles. An undetermined number of new three-wheelers are increasingly being observed in the field.

b. Mandates and Authorities for Use and Protection

Recreation management in all areas is guided by several legal mandates. The Federal Land Policy and Management Act of 1976 (FLPMA) establishes guidelines for administration, management, protection, and enhancement of the public lands. The Act provides for management of outdoor recreation and human occupancy of the public lands. Management of these lands is to be on the basis of multiple use and sustained yield unless otherwise specified by law.

The National Environmental Policy Act of 1969 (NEPA) recognized the impacts of human activity on the interrelationships of all components of the natural environment. It states, "The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment." NEPA also requires Federal agencies to include, in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, an environmental impact statement (EIS).

The Antiquities Act and the Archaeological Resources Protection Act provide for protection of cultural resources.

The Wild and Scenic Rivers Act provides for protection of outstanding river resources. It requires the identification and study of rivers or portions of rivers (wild and scenic, recreational) and directs Federal agencies to cooperate with state governments.

Regulations for planning are found in title 43 of the Code of Federal Regulations, Subpart 1600 (43 CFR 1600); regulations for special designations of areas and sites are found in 43 CFR 2070. Regulatory direction for specific recreation programs (e.g., policy, authority, ORVs, permitting, etc.) are found in 43 CFR 8000.

Also applicable to recreation management is the Visual Resource Management (VRM) Manual 8400.

Executive Order 11644, as amended by Executive Order 11989, called for the classification of ORV use on all Federal lands.

Executive Order 11989 directs agencies to close areas to ORV use whenever it is determined that use of ORVs is causing, or will cause, considerable adverse impacts to soil, vegetation, wildlife, wildlife habitat or other resources on public lands.

Executive Order 11990 directs the BLM to minimize destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

Bureau regulations for management of ORV use, found in 43 CFR 8340, issued June 15, 1979, provide guidelines for managing ORV activities on public lands.

Regulations in 43 CFR 3802 address mining in WSAs and related ORV restrictions.

c. Present Management Practices and Effectiveness

1) Visual Resource Management

Visual resource management reviews all environmental assessments and environmental impact statements of projects for protection of existing visual resources. Suggested mitigation and or redesign is offered on projects, when necessary, to conform to present visual classes or for enhancement.

2) ORV Use

All of the Elko Resource Area, except for portions of the Wilson Reservoir Special Recreation Management Area, are open to off-road vehicle use. Those areas of Wilson Reservoir which are designated closed or restricted are

awaiting implementation funding. No competitive or commercial ORV ventures have been proposed. Present management is limited to occasional monitoring of motorcycle activities and identification of conflict areas.

Current conflicts arise from unorganized motorcycle riding in and around outlying areas of homes. Indiscriminant riding commonly results in creation of new tracks on erosive silt soils, within critical wildlife habitat areas and critical watersheds, or within sensitive environmental areas, such as meadows and streams.

Little of the conflicts and damage are done maliciously. In seeking the challenges of ORV recreation, users often cause fire by riding in tender vegetation, disturb livestock by crowding them, destroy roads and trails by utilizing them when muddy, impact visual resurces by hill climbing in highly visible areas, and endanger wildlife by utilizing critical habitat areas during important stressful periods. These impacts result from lack of resource knowledge, poor trail and road locations, physical barriers, lack of adequate desirable locations, and no management. These problems are accentuated in and near the communities where the majority of ORV use occurs and are less noticeable when use is dispersed.

Snowmobiles conflict generally as a result of crowding at staging areas (limited all-weather highway locations). The majority of oversnow use occurs on the U.S. Forest Service lands in the Lamoille Canyon area. Crowding in this area is resulting in a declining quality of experience, with more users moving to sites on BLM lands. Hard surfaced parking areas suitable for staging sites are extremely limited.

The new popular three-wheeler vehicles are generally limited to open ground and primitive roads but are efficiently operated on hard-packed snow.

3) Recreation Sites

BLM has three recreation sites: North Wildhorse Recreation Area, Wilson Reservoir Special Recreation Management Area, and Zunino Reservoir. Average season of use is from mid-April to mid-November or 58 percent of the year.

North Wildhorse Recreation Area is a 140-acre developed primitive fee campground. The 15-year-old campground is operated under a cooperative agreement by the Nevada Division of State Parks, with the BLM being responsible for maintenance. The 19-site aspen grove campground is separated from the reservoir by the Mountain City Highway and is about one-quarter mile back from the lake frontage. There are no boat facilities or trailer dump

stations. The facility is above 100 percent occupancy on peak holiday weekends and during deer season but averages less than 30 percent occupancy during the remaining season. Wildhorse campground contains fully developed individual campsites (except for tent pads), including shade cabanas, tables, stoves and fire rings. The campground has two hand-pump wells, two open vault restrooms and two group-use areas. The Federal fee schedule, including the Golden Age Passport Program, is in effect, with fees collected under the Land and Water Conservation Act. Maintenance has been limited to painting and patching the facility, as funded. The facility is old and beginning to show cumulative deterioration.

Wilson Reservoir SRMA plan was signed on December 7, 1983. The 5,440-acre facility has resource deterioration and health problems which await funding for mitigation through implementation of the management plan. Replacement of four dangerously deteriorated outhouses, tree plantings for campsites, signing, garbage-handling equipment and increased summer seasonal staffing have all been positive. The management area is designated under the ROS system as approximately 1,530 acres roaded-natural, 1,080 acres semi-primitive non-motorized, and 2,030 acres semi-primitive motorized. Implementation is not completed.

Zunino Reservoir is a small reservoir managed as a lightly developed dispersed recreation site. The restroom and garbage cans are serviced approximately weekly during the summer. Some fencing, tree plantings, designated campsites, road barriers, and signing have occurred in recent years. There is no completed recreation management plan or operations plan for the facility.

4) Commercial Recreation

Commercial recreation has not occurred which required any change in management plans or use allocations. Fishing tournaments and shooting events have been environmentally reviewed and, when appropriate, they were authorized under use permits. Commercial rafting permits for the South Fork of the Owyhee River have been issued through the Boise District Office. There is a SRMA River Management Plan for the South Fork of the Owyhee and Owyhee Rivers which regulates use of the area, as well as the Wilderness Interim Management Policy for those areas under wilderness review. Hunting and fishing outfitters have been licensed by the Nevada Department of Wildlife in the past. New 1984 regulations require permitting of these outfitters by BLM. Allocations, preferential rights, easements and trails, and support facilities (such as corrals, line cabins and camps) and even when and if commercial outfitting is compatible with resource management are current management concerns.

d. Social and Economic Considerations

SOCIAL

According to the 1982 Statewide Comprehensive Outdoor Recreation Plan, Elko County, which is the only county in Outdoor Recreational Planning Region V, supports a large share of the state's dispersed recreational activities. For example, 15.2 percent of the state's total for fishing occurs in the county, 24.5 percent of the hunting, 11.4 percent of the primitive camping and 10.7 percent of the backpacking. That same report indicates that although most of the current recreational needs for residents of Region V are being met, there is a very large nonresident demand on existing recreational areas. As a result of one study by the U.S. Forest Service in the Jarbidge Wilderness Area in 1977, 47 percent of the users were non-Nevadans. This high percentage of users is probably a good indication of nonresident pressures within the region.

To some extent, this out-of-state use has created a negative perceptual impact on local residents, particularly hunters. The opinion is often expressed that "there are too many hunters from California coming into the area." The area also provides a significant degree of inter-region hunting by Nevadans who reside elsewhere in the state.

The county also provides a much greater base for other recreational activities that the local population is demanding. Although the county has only 2.2 percent of the state population (1980 Census), it provides 10 percent of the off-highway vehicle use, 6.5 percent of rockhounding activity, 6.4 percent of the horseback riding activity, 6.7 percent of the exploring activity, 8.9 percent of shooting (non-game) activity, 5.3 percent of the photography activity, 6.0 percent of the sightseeing activity, and 4.5 percent of the motorboating activity. Significant increases by out-of-area users, particularly in hunting and fishing, would probably intensify the negative feelings of local residents toward those out-of-area users.

Some concern has been expressed by local residents for the establishment of a rifle range on public lands. It is reasonable to assume that those residents will expect that the Elko RMP will accommodate their concerns.

Since Nevada is the fastest growing state in the nation, it can be expected that pressures upon existing recreational facilities will continue to increase. This, coupled with fiscal constraints that traditionally hit recreational programs the hardest, poses a continuing management dilemma that will probably continue into the foreseeable future.

ECONOMIC

Adjustments in the size of present wildlife populations may be expected as a result of alteration of habitat conditions, as well as changes in the amount of vegetation allocated to wildlife. Adjustments in wildlife populations will influence the number of hunter-days, thereby impacting expenditures, income, and employment. Based on an estimated last three-year average use, approximately ____ hunter-days per year were expended pursuing affected game species. Expenditures associated with these hunter-days are estimated to total $____ (1982 dollars) per year and provide $____ in resource area income, while creating _____ jobs.

While other recreational activities contribute to the area economy, these activities are not expected to be significantly affected and will not be considered in the impact analysis.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present Demands

As Elko County's percentage of the state's population is declining, so is its percentage of recreational use. This is not to say that the recreational opportunities demand is not increasing as Elko grows. The state SCORP, which lists this as Region V, shows that facilities available for the local population are more or less currently adequate. In relative numbers of growth, 47 percent of the use is from out-of-state, and 10 to 25 percent of recreational activities of the rest of the state's residents are pursued in Region V.

Almost all recreational opportunities are declining. Existing BLM recreation facilities were not designed for, nor have they been maintained or funded to operate at, current demand levels. Current facilities and land designations are only responsive to reservoir fishing-related recreation. Even these facilities are showing resource deterioration and a declining quality of recreation experience. Local users are developing other dispersed recreational interests in less crowded activities (such as horseback riding) and utilizing these areas at other times of the year. Dispersed recreation experiences are adequate for the local population with their familiarization of the region and contacts which allow access through private lands. The growing number of out-of-region users generally do not have these same advantages. The combined effect of some public lands increasingly being lost to recreationists through mining and other activities, as well as increasing closure of private lands, is decreasing the supply of known and accessible quality recreation areas.

Road conditions pose a problem for recreationists. Secondary BLM roads which serve as access to important recreation areas are currently impossible to maintain for even primitive four-wheel drive access because of limited agency equipment, personnel and funding.

The capability to meet present recreation demand is very restricted, as the program consists basically of reviewing other projects as to how they will impact known recreation activities and writing management plans for existing developed facilities. In order to resolve conflicts, expand opportunities and scatter users, reduce crowding of areas, identify access barriers, and respond effectively to the public and other agencies, the BLM needs to gather current information, designate high quality recreation areas, and staff, fund and provide equipment/facilities for the program.

b. Opportunities to Meet National and State Director Goals and Resolve Planning Issues and Management Concerns

An important strategy will be to designate, for recreation management purposes, those public lands which contain outstanding dispersed recreation opportunities. This will increase the desirability of the area through minimum to moderate level BLM management actions. These enhanced special recreation designations will be the most cost effective method of responding to the increasingly important Intermountain Region recreation demand on the Elko Resource Area.

The BLM is not presently responding to Executive Order 11644 and subsequent Bureau regulations pertaining to ORVs. Most observed ORV-related impacts are occurring through intensive use of public and checkerboard lands in the Elko and Spring Creek areas. Inventories of conflicts and resource damage need to be conducted within intensive use areas, and a publicly developed ORV management plan of open, closed, and restricted designated trails needs to be established.

c. Future Demands and Needs and the Capability to Meet Them

Recreation has grown about 15 percent a year in the Elko area in recent years. Nonlocal users are already crowding out local users at developed facilities. Local users' needs could outstrip available resources and increasingly conflict with other lands uses in the near future if no actions are taken. If some recreational enhancement measures are taken on popular recreation areas to accommodate growing trends, use can be accommodated and major conflicts mitigated at a reasonable funding expense before expensive, intensively managed facilities would be needed.

Nonlocal recreation use is at capacity for a quality recreation experience. With the growth rate of those regions which are utilizing the Elko area, recreation use can easily be expected to double within the next ten years. With the decreasing opportunities for recreation around the major metropolitan areas and the addition of two new major reservoirs to Elko's existing inventory of recreation opportunities, the Elko RA can expect to be even more attractive. Since nonlocals are destination users and stay longer, they generally require better support facilities. Carrying capacities of reservoirs are determined by the Nevada Department of Wildlife's ability to provide and manage the fish. The quality of the fishery will decline in relation to the fishing pressure. The physical ability of the land and the managing agencies to provide support is limited. Wildhorse Reservoir, with five developed recreation sites, can support some pressure. Wilson Reservoir is currently taking serious physical resource damage while awaiting implementation funding of the Wilson Reservoir management plan.

Perhaps the least used recreation resource is streams. Of the 585 total miles of stream, 209 miles of stream in the resource area are on public lands. Only 60 miles of the public mileage is considered fishable for game fish. While there were 12,201 angler-days spent stream fishing, most were expended on public lands because of access. This is very light use, at best, stretched out over an approximate 200-day season, which would translate to about 60 anglers per day or four miles of fishable stream per angler-day. Some use occurs on private lands, while most is concentrated on a relative few miles of desirable and accessible stream.

Stream fishing can be enhanced by many methods. Access to streams, trails, riparian habitat improvement, stocking levels, primitive campsites, picnicking facilities, fence barrier modification, grazing pattern adjustments and timing are just some of the means available to improve dispersed use of streams for fishing. Many of these same methods would enhance use of non-fishable streams for other recreational uses.

d. Constraints on Management to Avoid Undesirable Irreversible Commitments

Failure to undertake necessary management actions or inadequate funding for implementation in order to disperse recreation users will result in conflicts with other resource users, resource deterioration, a decrease in the quality of recreation experience, necessary hardening of existing facilities and expensive rehabilitation.

Due to the long time interval necessary for acquiring easements, those areas of unique quality recreational land which have minimum easement requirements should be handled first.

e. Consistency with Non-Bureau Plans

Lander County is in the preliminary phase of seriously reviving the Rock Creek Reservoir Plan. This would create about an 800-acre recreational reservoir on Rock Creek near the confluence of Antelope Creek about 15 miles north of the community of Battle Mountain. While the initial plans are for the Nevada Division of State Parks (NDSP) to operate the facility, that would create some moderate impact to the Bureau to manage off-site recreational activities which would occur below the reservoir; however, if NDSP decides not to operate the facility, the Bureau could be thrust into the lead, with major impacts.

NDSP is planning for a highly developed approximately 100-unit campground and marina on the progressing South Fork Reservoir. This will create major demands on surrounding, and particularly downstream, Bureau lands for recreational activities not available or allowed within the state park. NDSP has a SCORP which encourages the Bureau to provide dispersed recreational and water-related recreational opportunities.

The Humboldt National Forest has five campgrounds in proximity to the resource area. Four of these are used at far less than capacity, while use at the Lamoille Canyon on the east side of the resource area is at capacity. Winter use of the canyon by skiers and snowmobilers is at capacity, and conflicts have been far less than would be expected, except for an apparent high tolerance by both groups.

The U.S. Forest Service lands are landlocked much worse than the Bureau lands, and the major recreational emphasis is concentrated on acquiring public access. The only U.S. Forest Service access anticipated in the near future is the Cottonwood Road, a reconstruction and upgrading of a primitive trail northeast of Zunino Reservoir which leads across Bureau public lands to the Cottonwood Creek in the Ruby Mountains. This road may create some slightly increased camping demand on Zunino Reservoir.

Elko County does not have a county parks department but, according to the county plan, has identified some 30 various areas for recreational or historic development.

The Nevada Department of Wildlife would generally manage for a high harvest success rate of quality game and fish. Their management aim is shifting some from capture and release to attaining reasonable numbers by natural reproduction, introduction and development of varied game species, to provide increased opportunities and increasing use of streams for fishing.

f. Critical Threshold Levels

Recreation has no thresholds or carrying capacity limits. Recreation is the people side of resource management, people engaged in the leisure use of land resources as opposed to vocation and profit use.

Recreation management is balancing the leisure use and the resource. The quality of the recreation experience available is proportionately related to the quality of the resource and its capacity to be utilized without unmanageable degradation. Recreation demand will not go away if opportunities are denied but the quality of enjoyment will decrease. Lesser quality recreation is more demanding of support facilities and usually more consumptive of resources.

Many types of recreational pursuits are dependent upon narrow parameters of available resources, such as whitewater rafting. The more resource-dependent the recreation opportunity, the more limited is the carrying capacity for the quality of the experience.

Critical levels for the formulation of alternatives involve cooperation with the Nevada Department of Wildlife's goals for harvesting of quality wildlife. BLM must manage public lands within the narrow capacity of a high quality experience. Most fishermen have as destinations reservoirs. Highly developed support facilities on reservoirs are mostly at capacity. Mountain streams, rivers, and mountain ranges are prime recreation areas for most users. Hunters are highly dependent on mountain ranges that have not been lost to mining.

Recreation is very dependent on transportation networks and accessiblity. Recreation use can be shifted from comparable sites by increasing or decreasing the quality of roads and trails. There is a difference between recreational roads which are scenic or challenging and recreational roads which are acceptable access. The resource area has one recreational road which is seven miles in length and no trails.

Recreation is utilized by two different populations. The wishes and demands of the local users are very different from those of the nonlocal users.

4. Additional Management Concerns

a. Present Practices

1) Funding to upgrade and maintain recreational roads

2) Staffing and funding to supervise volunteers, convict crews, and other alternative work forces

3) Need to update existing brochures

4) Need to upgrade sign program

5) Need a motorcycle, snowmobile and raft to work with those user groups in the field

6) Need citation authority to enforce present regulations

b. Lack of an Existing Program

1) Need to develop an educational, interpretive, public relations program to correct undesirable recreational behavior and practices

2) Need a recreational transportation plan of roads and trails to identify existing and potential access, condition, and planning and identification of barriers for modification

3) Need an inventory of desirable recreation areas for enhancement of use and a program to resolve conflicts and barriers to those uses which will meet the annual increasing demand

4) Need to develop a cave management program for Mineral Cave

5) Need to develop an active coordination program to pursue cooperative agreements and recreational leases with interest groups, user groups, businesses, ranches, and other agencies

6) Need to create a resource area recreation information map to resolve crowding conflicts on the better known sites

7) Need to designate and develop intensive recreation facilities to accommodate user demand to resolve resource, safety and health conflicts where the dispersed recreation is inadequate

8) Need an annual average goal of establishing approximately ten miles of horse, foot, and ORV trails until backlog of demand is met

9) Need approximately an annual average goal of: two picnic sites per year, one boat ramp per reservoir, five tent sites, five recreational vehicle sites, ten primitive camp areas, ten miles of public stream opened to recreation use, one trail head, one river put-in-take-out point, ten recreational roads signed, one interpretive/educational site, one prehistoric/historic recreational-cultural site or trail segment developed for public use, two outfitter-guide support facilities constructed. These goals are needed until user demand is satisfied.

5. Opportunities for Changes in Management Practices

a. Recreation Sites and Use

The Bureau has concentrated on protection and development of nationally significant public lands and responded to recreation use of lesser lands primarily where resource damage, health or safety issues have become significant. Because of the inherent time lags of planning, budget cycles, and construction time, recreation management has become an expensive, losing catch-up game. Often publicly-developed intensive recreation facilities are too little too late and in competition with private sector recreation. Many other times the recreational land resource has been lost to land exchange, sale, mining, development, vegetation manipulation or other inadvertent land actions because regionally significant recreation land values were not recognized.

Public land management is far more effective in providing wildland recreation opportunities and developing resource compatable user patterns than in correcting conflicts and rehabilitating lost resources.

Wildland recreation management must be responsible to the user population, the national interest, the resources, and other uses of public lands. As the wilderness inventory of public lands identified those areas containing outstanding wilderness values, BLM must recognize those other public lands containing significant recreation values. Designating these lands as special recreation management areas is a recognition of their high recreation value. Designating these areas would not necessarily result in exclusion of other land uses but would provide for planning and development without the loss of the important recreation resource. Designation and management of these areas will allow the private sector to develop plans to provide services and jobs, other agencies to coordinate their plans, and the public users to establish use patterns at the crowded developed reservoirs, as well as at lesser known alternate sites.

b. Visual Resources

A visual resource inventory is on an accompanying overlay. All resource projects should be reviewed for visual contrast. All projects in Class III zones should not detract from the existing visual resource. Those limited areas of Class II should be intensively managed for the visual resource, and all projects should be limited and highly restricted.

Where would intense recreation management be effective through designation and development to mitigate conflicts?

1) Wilson Reservoir: See Wilson Reservoir Recreation Area Management Plan (RAMP). Without the implementation of the plan on the designated area, the intensive use occurring on the reservoir will destroy the existing recreation resource.

2) South Fork Humboldt River: This lower 14 miles of the river below the proposed South Fork Reservoir State Park will become intensively used for rafting, picnicking, hunting, fishing, and off-road vehicles. With the release of water year-round, as compared to its current spring-flood/summer-trickle, the river canyon will become very attractive for recreation. The presence of the state park will serve to attract more users to this area. This area also contains a major National Register of Historic Places archaeological site, portions of the historic Hastings Cut-off Trail and the Elko to Hamilton Stage Route. The canyon is also an important habitat area for sensitive species of cliff nesting raptors.

3) Adobe Mountain Range: This range is heavily used by the local population. The area, located just north of the City of Elko, provides intensive use for all kinds of hunting, hiking, ORV, exploring, rock collecting, snow-play, target shooting, horseback riding, and other recreational uses. With seven creeks, critical wildlife habitat, steep mountainous canyons, and fragile soils, the recreation use is already impacting some resources. Conflicts among recreational interests, ranching, minerals exploration, and private lands are already evident. The Bureau is acquiring exchange lands here presenting opportunities to manage this range and mitigate some of the conflicts.

4) Mineral Hill: Located on the south end of the resource area, this area contains Mineral Cave, Mineral Cemetery, and old portions of the historic mining camp of Mineral Hill. The cave is a largely unexplored wet limestone complex. Development of adjacent springs may impair the cave's environment, and there is evidence of past vandalism. Many of the historic structures have been torn down for the bricks and old wood. The cemetery is protected by a recent BLM exclosure.

5) Snowstorm Mountains: An area northwest of the historic Midas mining camp. This area contains the South Fork Little Humboldt River WSA, as well as high aspen forests, a dozen streams, many outstanding picturesque geologic formations, towering cliffs, wild horses and outstanding wildlife values. The area is being considered for reintroduction of bighorn sheep. The area has legal and physical access problems. Mineral exploration activities, if not coordinated with a recreation plan, may seriously impact resources. The area contains Class II visual resources.

6) Lone Mountain/Swales Mountain: This is the southern part of the Independence Range below the Humboldt National Forest Boundary. The area is Classes II and III visual resources, contains very high quality hunting lands, aspen stands, headwaters of numerous streams, sheer rock cliffs, mountain meadows, and very limited private lands. The area is starting to be used by an outfitter and has been used for snowcat skiing in the winter, as well as for snowmobile use. The area has been inquired about for downhill skiing development. The area has some legal access, but the physical access is limited. This block of more than 70,000 public acres could provide outstanding recreation opportunities year-round. The area would provide excellent photographic opportunities, wildlife observation, hunting, fishing, hiking, horseback riding, ORV routes, snowmobile routes, cross-country skiing and downhill skiing, primitive camping and picnicking, and rock collecting. Mineral development without a coordinated recreation plan could severely impair existing recreation and wildlife values of the area. There are already two commercial businesses adjacent to the mountain range which can provide expensive, developed support services and several ranches which could find opportunities to provide some services.

7) Mitchell/Pearl Creeks: This area on the west side of the Ruby Mountains near the south end of the resource area is the single largest public accessible area into the mountains. Besides the access to the forest, this area already is being used to handle overflow pressures by deer hunters from the crowded canyons. Physical access to the area is primitive via unmaintained roads. The three streams in the area could provide additional fishing, camping, and picnicking opportunities.

8) Tosawihi Quarry: Located within the western portion of the resource area, this large area of prehistoric quarries represtns a unique cultural site. Plans and designation of the area could protect the site from commercial exploitation by limiting the amount of rock collected, as well as providing suitable sites, and provide interpretive primitive camping sites, and health and sanitation facilities. This facility would provide limited economic advantage to the community of Battle Mountain, as most visitors need to pass through the town.

9) Boyd Reservoir: This small reservoir is located north of Spring Creek and is entirely on public lands. While the reservoir is entirely drained in drought years, it could provide put-and-take fishing most years and provide water-based hunting and fishing and picnic recreation to the local population. The reservoir is currently restricted by no public access across one section of private land and primitive trail much of the way. Gates complicate current usage. A small developed site, gravel

roads and cattleguards would provide a much-needed recreation area and relieve some of the day-use crowding on Zunino Reservoir.

10) Carlin Canyon: This meander of the Humboldt River to the west of Elko is a unique natural wonder. The steep-sided deep canyon contains a reconveyed portion of the old by-passed U.S. 40 and a highway roadside rest. A variety of exposed geologic formations, combined with lush river vegetation, comprises Classes II and III visual resources. The old highway is still accessible from Interstate 80 and is used intensively for camping. Trash, junk cars, sanitation, squatting, and resource damage are of prime concerns. Opportunities for interpretive and historical information on one of the last public portions of the historic wagon trail are abundant here.

E. WILDERNESS

1. Introduction

Section 603 of FLPMA directs the Secretary of the Interior to review roadless areas of 5,000 acres or more identified as having wilderness characteristics and to report to the President on their suitability or nonsuitability for wilderness designation. The Secretary is also directed to cause mineral surveys to be conducted by the U.S. Geological Survey and the Bureau of Mines to determine the mineral values, if any, in suitable areas. The Secretary is further directed to manage lands under review, in a manner that will not impair their suitability for wilderness designation, as set forth in BLM's Interim Management Policy.

a. Planning Question

Which wilderness study area (WSA) or portions of WSAs will be recommended as suitable and which will be recommended as nonsuitable for designation as part of the National Wilderness Preservation System?

Planning Criteria

BLM recommendations in this RMP on suitability or nonsuitability of wilderness study areas for wilderness preservation will be based upon:

1) Evaluation of Wilderness Values

   a) Mandatory wilderness characteristics: The quality of the area's wilderness characteristics, e.g., size, naturalness, and outstanding opportunities for solitude or primitive recreation.

   b) Special features: The presence or absence, and the quality of the optional wilderness characteristics, e.g., ecological, geological or other features of scientific, educational, scenic or historical value.

   c) Multiple resource benefits: The benefits to other multiple resource values and uses which only wilderness designation of the area could ensure.

   d) Diversity in the National Wilderness Preservation System: Consider the extent to which wilderness designation of the area under study would contribute to expanding the diversity of the National Wilderness Preservation System from the standpoint of each of the factors listed below:

      - Expanding the diversity of natural systems and features, as represented by ecosystems and landforms.

- Assessing the opportunities for solitude or primitive recreation within a day's driving time (5 hours) of major population centers.

- Balancing the geographic distribution of wilderness areas.

2) Manageability

The area must be capable of being effectively managed to preserve its wilderness character.

3) Quality Standards

a) Energy and mineral resource values: Recommendation as to an area's suitability or nonsuitability for wilderness designation will reflect a thorough consideration of any identified or potential energy and mineral resource values present in the area.

b) Impacts on other resources: Consider the extent to which other resource values or uses of the area would be foregone or adversely affected as a result of wilderness designation.

c) Impacts of nondesignation on wilderness values: Consider the alternative use of the land under study if the WSA, or some portion of the WSA, is not designated as wilderness and the extent to which the wilderness values of the area would be foregone or adversely affected as a result of this use.

d) Public comment: In determining whether an area is suitable or nonsuitable for wilderness designation, the BLM wilderness study process will consider comments received from interested and affected publics at all levels -- local, state, regional, and national. Wilderness recommendations will not be based exclusively on a vote-counting majority rule system. The BLM will develop its recommendations by considering public comment in conjunction with its analysis of a wilderness study area's multiple resource and social and economic values and uses.

e) Local social and economic effect: In determining whether an area is suitable or nonsuitable for wilderness designation, the BLM will give special attention to adverse or favorable social and economic effects, as identified through the wilderness study process, which designation of the area would have on local areas.

f) Consistency with other plans: In determining whether an area is suitable or nonsuitable for wilderness

designation, the BLM will consider and document the extent to which the recommendation is consistent with officially approved and adopted resource-related plans of state and local governments and Indian tribes, as required by FLPMA and the BLM planning regulations.

2. Wilderness Study Area Analysis

For an analysis of each WSA within the Elko Resource Area, refer to the Elko Resource Area Wilderness Technical Report which is to be published simultaneously with the draft RMP in 1985.

3. Present Management Practices and Effectiveness

Present management of wilderness study areas is for surveillance of each area and review of any proposed actions under the Wilderness Interim Management Policy.

The draft EIS for Owyhee Canyon and Devil's Corral WSAs is being evaluated after public review of the draft Owyhee Canyonlands EIS. These two units are part of the Oregon, Idaho, and Nevada study areas on the Owyhee River System wilderness recommendations.

4. Social and Economic Considerations

a. Social

Wilderness is one of the most visible and controversial issues in the resource area. Resistance to wilderness was, and continues to be, widespread. The resistance to wilderness primarily concerns the issue of mineral potential. The term "wilderness" evokes strong feelings from proponents and opponents of the concept that some areas should remain essentially unmodified by human development. Opponents who reside in the resource area interpret it as an area "locked-up" against any uses but occasional solitary enjoyment by those whose livelihood does not depend on the economic use of resources in the areas proposed for wilderness designation. In the resource area, as in many parts of the West, there is resentment of the suggestion that any publicly-owned open spaces should be encumbered by regulations against particular uses. Unregulated public access to public lands is jealously guarded as a birthright.

The minerals industry strongly feels that before making any decision to commit an area to the costly process of study of its suitability for wilderness, several factors must be carefully considered. One must weigh an area's potential for economic mineral deposits and the importance of minerals to the nation against the quality or uniqueness of the area as wilderness. In general, the industry is opposed to any management proposal that limits the potential for minerals exploration.

While it generally can be expected that the Nevada Division of State Parks will support the concept of wilderness, it can also be expected that other divisions in state government, especially the Department of Minerals, will probably oppose wilderness on the same grounds as the mining sector opposes the wilderness program. Given the different mandates of the various state agencies, opposing positions of those agencies on the same issue(s) is not surprising.

b. Economic

Economic interest in the wilderness study areas derives from their use for grazing, recreation, forest products, mineral production, and tax revenues. Each of these activities generate income and employment. However, at the present time, the specific level of each of these activities occurring within the WSAs has not been identified.

An important consideration will be the effect on county revenues should existing oil and gas or geothermal leases expire or fail to be renewed due to wilderness designation. The State of Nevada receives 50 percent of all mineral leasing revenues, which are then apportioned to the counties through the Distributive School Fund on a pro-rata basis. In addition, the counties levy a tax on oil and gas and geothermal leases equal to the leasing fee paid to BLM. These funds may be lost if the leases are allowed to expire.

F. LIVESTOCK

1. Introduction

As a result of a 1973 Federal court suit, the BLM has been directed to prepare an environmental impact statement (EIS) to analyze the potential impacts of alternative grazing programs. This EIS requirement is integrated into the resource management planning process.

a. Planning Question

What will be initial stocking levels, kind of livestock and season-of-use for each allotment?

Planning Criteria

Mapped vegetation and utilization patterns, ecological condition, soil survey and range site correlation for each allotment will be compared to the total and active grazing preference for each livestock operator, and the forage demand for wild horses and wildlife. This information, along with additional range monitoring studies (actual use, utilization, condition class, trend and climatic information) and consultation with livestock permittees and other interested parties, will be used to establish (1) a proposed initial stocking level, (2) kind of livestock, and (3) season-of-use designed to improve each allotment to good condition or better.

When the existing demand for forage exceeds the current forage production, livestock, wild horse, and wildlife numbers will be balanced to meet available forage needs.

b. Planning Question

Which allotments have the potential to produce additional livestock forage and which require allotment management planning?

Planning Criteria

1) Soil survey and range site information, range monitoring studies and site-specific observations by BLM personnel and permittees will be used to identify those areas having potential for development of additional livestock forage.

2) Other inventories and site-specific information will identify critical resource values, such as crucial wildlife habitat, cultural sites, erosive soils, wilderness study areas, and high quality scenery. Land treatments will be emphasized if they do not conflict with valuable non-livestock resource values. Grazing management will be designed to enhance these values, along with the vegetation and soil resources.

3) Allotments will be categorized based on the selective management approach which identifies allotments sharing similar resource characteristics, management needs and economic potential for improvement. Similar allotments will be identified as belonging to one of three categories, for which the objective is to: Maintain their current satisfactory condition (M); Improve their current unsatisfactory condition (I); or manage the allotments Custodially while still protecting existing resource values (C). Criteria for categorization of allotments is outlined in BLM Washington Office Instruction Memorandum No. 82-292 and presented on Table 1 in the Livestock Appendix.

a) Allotments in the Improve category will be given first priority for development of allotment management plans or activity plans to resolve specific, identified problems. Second priority for allotment management plan development will be given to allotments in the Maintain and Custodial categories.

b) Allotments have been categorized (M, I, or C) as a result of consultation between Elko Resource Area range conservationists and livestock permittees. All permittees have had the opportunity to provide input. The Elko District Grazing Advisory Board, Coordinated Resource Management and Planning Committee, Nevada Department of Wildlife and other interested parties will also have the opportunity to provide their recommendations.

2. Current Management Situation

a. Present Conditions and Trends

VEGETATION TYPES

The Elko RA supports vegetation typical of the Great Basin region. The present native plant communities are dominated by big sagebrush and grassland. Seedings, composed of predominately crested wheatgrass, comprise approximately 250,000 acres or about 8 percent of the Elko RA.

The resource area has 17 major ecological sites or potential plant communities on native rangeland. Each ecological site is based on differences in production and in proportions and kinds of plant species that are potentially dominant on a specific site. Table 2 in the Livestock Appendix lists the acreage of ecological site, seedings and woodlands, by allotment. Table 3 in the Livestock Appendix lists the dominant plant species found in each major ecological site.

CONDITION

Ecological condition describes the existing vegetation composition of an area in relation to the natural potential plant community. It is an expression of the degree to which the kinds, proportions, and amounts of plants in the present native plant community resemble the potential plant community. Ratings for seedings and woodlands differ from ecological site analyses in that production solely determines the category of condition.

The condition rating procedures for woodland types are not fully determined at this time. When these procedures have been finalized they will be described in this section.

Condition data for the native and seeded rangeland was collected during a 1984 condition inventory. Table 4 in the Livestock Appendix shows condition ratings, by allotment.

TREND

Trend is the direction of change in ecological status or in resource value ratings observed over time. Information on observed apparent trend is shown on Table 5 in the Livestock Appendix.

SEASON-OF-USE

An understanding of the growth cycles of forage species is important to the goal of maintaining a sustained yield and in the development of sound grazing systems. Altering the season of grazing use and allowing for periodic rest can improve vigor and production while maintaining the same level of use.

The critical growth period for most of the perennial grass species in the Elko RA is approximately early May through mid-July. This growth period uses carbohydrate food reserves stored the previous year. By mid-July, an ungrazed grass plant replenishes its root reserves and will continue maturing through the seed dissemination stage by mid-August. If a plant is unable to replenish its root reserves because of moisture conditions or grazing during the critical growth period, it will progress into winter dormancy with a deficit in energy reserves. If this cycle is repeated regularly, this energy deficit increases until the plant can no longer maintain itself and dies.

POISONOUS PLANTS

Poisonous plants found in the Elko RA are listed in Table 6 in the Livestock Appendix. The most common poisonous plants found within the Elko RA are greasewood and halogeton.

b. Mandates and Authorities for Use and Protection

The stated purpose of the Taylor Grazing Act is to stabilize the livestock industry dependent upon the public range. In Section 2, this Act directs the Secretary of the Interior to do any and all things necessary to stop injury to the public grazing lands and to provide for their orderly use.

The Federal Land Policy and Management Act of 1976 (FLPMA) directs the Secretary to develop, maintain, and revise land use plans for public lands and to determine which lands remain available for domestic livestock grazing. It also requires that the public lands be managed in a manner that will provide forage for domestic animals. It provides policy for periodic inventory of public lands and requires the Secretary to prepare and maintain an inventory of public land resources and their values. This inventory is to be kept current to reflect changes in conditions. FLPMA also mandates multiple use management on a sustained yield basis and directs the Secretary to consider present and potential uses of the public lands and the relative scarcity of the values involved and availability of alternative means and sites for realizing these values.

The Endangered Species Act of 1973 was passed to preserve threatened and endangered plant and animal species and the ecosystems upon which they depend. It directs that all Federal departments and agencies shall use their authorities to conserve plant and animal species officially listed pursuant to Section 4 of the Act. It mandates conservation of listed species, ensuring that the continued existence of listed species is not jeopardized and that the critical habitats of listed species are not destroyed or adversely modified.

The Public Rangelands Improvement Act of 1978 (PRIA) provides policy and commitment to manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives. It directs the Secretary to develop and maintain an inventory of range condition and trend and to keep the inventory current. It provides for and requires an intensive public rangeland maintenance, management, and improvement program for multiple use values.

The National Environmental Policy Act (NEPA) mandates preservation of important historic, cultural, and natural aspects of our national heritage and maintenance, wherever possible, of an environment that supports diversity and variety of individual choices. All aspects of the range management program are subject to NEPA.

Public Law (P.L.) 59-209, the Antiquities Act of 1906, provides basic legislation for the preservation and protection of antiquities on all Federal lands. It provides penalties for those who excavate or appropriate the values without

Secretarial permit, provides for the establishment by Presidential proclamation of national monuments from the public lands, and provides for permits for investigation of cultural and scientific resources to be issued to public, scientific, and educational institutions. The Archaeological Resources Protection Act of 1979 (P.L. 96-95) describes permit procedures for cultural resources inventories or excavations and penalties for damaging or removing archaeological resources without a permit. Construction of new range improvement projects is subject to this act.

Executive Order 11987 restricts the introduction of exotic flora and fauna by all executive agencies and provides for the introduction of exotic species in certain limited circumstances.

The BLM planning regulations found in Title 43 of the Code of Federal Regulations (CFR) Subpart 1601, which have their basis in FLPMA, require consideration of present and potential users of the public lands, the relative scarcity of the values involved, and availability of alternative means and sites for realizing these values.

The stated objectives of the BLM Grazing Administration Regulations (43 CFR Subpart 4100.0-2) are orderly use, improvement and development of the public lands, enhancement of their productivity by prevention of overgrazing and soil deterioration stabilization of the livestock industry dependent on public range, and provision for inventory and categorization of public rangelands. Regulations found in 43 CFR Subpart 4110.2-2(a) direct that grazing preferences be allocated to qualified applicants following allocation of vegetation among livestock grazing, wild and free-roaming horses and burros, wildlife, and other uses in the land use plan.

Bureau manuals provide further guidelines for meeting the legal requirements:

1621 provides direction for establishment of guidelines for the allotment categorization process of the Final Grazing Management Policy;

4110 provides procedural direction and standards for the allocation, transfer, adjustment and administration of grazing preference on the public lands;

4112 provides for allotment management plan development and implementation and stipulates that, in the interest of multiple use management, it may be necessary to exclude grazing from an area;

4400 gives policy and direction for management studies and management practices, providing basic requirements and considerations for the vegetation resource when determining level of management needed and explains condition and trend studies, monitoring procedures, criteria, and items to consider in determining levels of management and management practices that may be implemented on an allotment or area.

Organic Act Directives provide further instructions for livestock requirements:

77-75 directs that range improvement appropriations (8100 and 8200) may be used to fund wildlife projects, as long as the project contributes to improvement of rangeland condition.

The Bureau's Washington Office has issued several instruction memorandums applicable to various aspects of range management. These are listed numerically below.

78-299 If requirements of Executive Order 11987, Exotic Organisms, are met, exotic species will still not be introduced on public lands, nor will Bureau personnel assist in introducing exotics, until:

1) BLM Manual 6820 has been complied with;

2) it has been determined that no adverse impacts will occur to native species or ecosystems, and introduced species will be confined to the ecosystem into which introductions are being considered;

3) environmental assessments (EAs) are prepared.

82-292 Final Grazing Management Policy.

82-650 Grazing EISs and the adjustment of grazing preference.

83-27 Final Rangeland Improvement Policy provides guidelines for the orderly administration of grazing lands.

83-861 Outlines planning decisions related to grazing that should appear in resource management plans and management framework plan amendments associated with grazing EISs.

Applicable Washington Office information memorandums are listed below:

82-21 Describes the use of the "no grazing alternative" in grazing EISs.

c. Present Management Practices and Effectiveness

The Elko Resource Area includes the western half of the Elko District. Overlay F-1 shows the boundary of the resource area, as well as the boundaries of individual allotments. It is important to note at this time that the allotments identified by letters on Overlay F-1 are not administered by the Elko Resource Area, and information and planning for these allotments will not be included. Likewise, four allotments (Tall Corral, Jakes Creek, White House, and Eleven Mile Flat) are licensed by the Elko Resource Area but have been addressed in the Paradise-Denio Grazing EIS.

The Elko Resource Area administers 141 grazing allotments, encompassing 2,844,881 acres of public lands and 1,369,521 acres of private lands. Acreage figures for individual allotments are displayed on Table 7 in the Livestock Appendix. Livestock grazing on these allotments generally occurs between April 15 and October 31 (see Table 5). This season of use will vary for individual allotments due to: annual requests and concerns of livestock operators, sound management practices, and the application of current range policy.

The numbers of livestock per allotment will also fluctuate annually. Average numbers for 1981 through 1984, however, show that a total of 99,114 cattle, 14,250 sheep and 20 horses are licensed within the Elko Resource Area on a yearly basis. These amounts will be affected by established preferences, availability of forage, period of use, and approved license changes.

Currently, 99 livestock permittees have grazing privileges. Of these, 94 run cattle only, three run sheep only, one runs cattle and sheep, and one runs horses only.

Privileges associated with the 141 allotments administered by the Elko Resource Area total 386,499 AUMs of active preference, and 90,579 AUMs of suspended nonuse. These figures are broken down by allotment in Table 8 in the Livestock Appendix. This table also includes reported actual use and averaged licensed use for the grazing years 1981 to 1984.

Range improvement projects for the Elko Resource Area completed prior to 1984 are listed in Table 9 in the Livestock Appendix.

Grazing systems implemented consist of eleven allotment management plans (AMPs) and one coordinated management plan (CMP). These comprise 457,913 acres of public lands or 16 percent of the Elko RA. An AMP or CMP determines the manner and degree that grazing use will be conducted, including the grazing system and range improvements. A conversion of one AMP to a coordinated management agreement (CMA) is pending.

SELECTIVE MANAGEMENT ALLOTMENT CATEGORIZATION

All grazing allotments in the resource area have been assigned to one of three management categories based on present resource conditions and the potential for improvement (see Table 1). The M allotments generally will be managed to maintain current satisfactory resource conditions; I allotments will generally be managed to improve resource conditions; and C allotments will receive custodial management to prevent resource deterioration.

MONITORING

The establishment of monitoring studies began in 1982 and is an ongoing part of the range program. Implementation of monitoring on all "I" category allotments should be completed by the end of 1985. Monitoring studies include data on quadrat frequency, utilization, and production. A five-year study of this data, coupled with an equivalent amount of actual use data, will result in carrying capacities for each allotment.

CONCERNS

Present distribution of livestock in many areas is poor. Limited water availability and a lack of fences greatly contribute to the problem.

Due to the Act of July 1, 1862 granting sections of land to the railroads, a corridor of land 20 miles wide and extending from the east to the west boundary of the resource area includes alternating sections of public and private lands. In some cases, this checkerboard pattern of ownership reduces the effectiveness of management within allotments, or benefits to the public are far less than the cost of management.

Mining activities within the resource area include minerals and oil exploration and development. Small amounts of acreage and AUMs are being lost to mining. Presently, mining in the Mary's Mountain Allotment has eliminated 1,654 acres and 172 AUMs from the allotment.

Utilization by both wildlife and livestock occurs throughout the Elko Resource Area, however, areas of concern are limited to key winter areas, for mule deer, and sage grouse strutting grounds. See Wildlife Habitat.

SAVAL RANCH

The Saval Ranch Research and Evaluation Project was initiated in May, 1978. The overall objective is to evaluate the effects of livestock grazing management systems and range improvement practices on livestock production, vegetation, fish and wildlife and their habitat, watershed hydrology, water quality, economic factors, and other resource values.

The project is conducted on the Saval Ranch, a privately-owned enterprise located in northeastern Nevada. The ranch, livestock and grazing allotments are made available for this interdisciplinary study by the Saval Ranching Co. The allotments contain 58,757 acres; 13,825 acres are privately-owned, 28,091 acres are managed by the Bureau of Land Management, and 16,841 acres are managed by the U.S. Forest Service (Saval Coordinated Management Plan, BLM, 1981).

Funding and support are provided by the Bureau of Land Management, U.S. Forest Service, Agricultural Research Service, and Agricultural Experiment Station, University of Nevada, Reno. Further funding for research projects may be limited.

d. Social and Economic Considerations

SOCIAL

Public ranching attitudes in the Elko Resource Area are similar to those in other rural areas in Nevada. The ranching community strongly feels that the production of food and fiber should be the first priority on public lands and opposes the assignment of grazing areas to wilderness preservation, for wild horse grazing, or for other uses that may preclude or interfere with livestock grazing.

The major concern from the ranching sector regarding wilderness involves the constraints that would be placed on future range improvements if those wilderness study areas are ultimately included in the National Wilderness Preservation System. For those ranchers who have improved existing waters or developed new waters on their allotments, concern exists that the additional AUMs that may develop as a result of those water improvements would be assigned to wild horses.

Ranching is a valued source of identity for many resource area residents, both for those who are an integral part of the ranching sector, as well as for those non-ranching residents who identify with ranching by virtue of their sharing a common rural background. As a result of ranching dependency on continued grazing on public lands and as a result of that ranching community's inability to control those public lands as they deem appropriate in support of the livestock industry, the "Sagebrush Rebellion" was born. Although that particular proposal has lost some momentum, the anger, frustration, and distrust directed toward the Bureau of Land Management continues to simmmer and occasionally erupt.

This condition will probably always exist to some degree, although the intensity may vary significantly as ranchers come to feel that they are gaining more control over their grazing privileges on public lands. The participatory process for implementation of the selective management approach, along with the Coordinated Resource Management and Planning Committee and the Stewardship Program, may give them that sense of control. If so, this may eventually lead to more amiable relations between the ranching sector and the Bureau in the resource area.

ECONOMIC

Agricultural production in the Elko Resource Area consists primarily of cattle, hay, and alfalfa. Livestock predominates. Cash receipts from marketings in 1982 totaled $42.2 million in Elko County, with $40.6 million from meat animals and other livestock and $1.6 million from crops. Agriculture accounts for about four percent of total labor and proprietors' income in the county and provides 7.3 percent of total employment.

Livestock have been using an average of 256,659 animal unit months (AUMs) of public land forage in the resource area. This accounts for about 21 percent of the total forage requirement and depicts the average dependency on the public lands.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present and Future Demands

The current level of livestock forage production within the Elko Resource Area is adequate to meet existing livestock forage demands.

Future demands for livestock forage are dependent upon many factors but are estimated to require an additional 19 percent above current levels or activation of suspended nonuse AUMs within the next 20 years. The capability to provide for this increased demand exists in the Elko Resource Area through increased allocation on existing seedings, establishment of new seedings, spray projects and burn projects, development of water projects, installation of division fences and implementation of grazing systems. The level of development of additional forage would be consistent with multiple use planning objectives.

b. Opportunities to Meet National and State Director Goals and Resolve Planning Issues and Management Concerns

Objectives of the range program currently include compliance with the court-ordered completion of this grazing EIS, maintaining livestock numbers at appropriate levels, implementation of monitoring studies, supervision

of range use, consultation with affected groups interested in planning and management, inventory of range condition, categorization of range allotments, establishment of priorities for the distribution of available funds, and the installation of cost-effective range improvements.

The capabilities exist to attain these goals in the Elko Resource Area.

c. Constraints on Management to Avoid Undesirable Irreversible Commitments

None.

d. Consistency with Non-Bureau Plans

e. Critical Threshold Levels

4. Additional Management Concerns

Conflicts do exist between the Bureau and local Shoshone Indian Tribes, particularly with the Dann Sisters of the TeMoak Tribe who claim ownership to a large portion of the State of Nevada. The case is currently before the U.S. Supreme Court. Due to a lower court ruling in their favor, the Danns and some of the TeMoak Tribe members are not conforming to licensed use and have not yet paid for use in the 1984 grazing season. Should the Dann court suit be ultimately decided in their favor, it would set precedent for TeMoak claims to aboriginal rights for additional lands.

The question of whether BLM can be recognized by the State of Nevada as a legal applicant for water rights has been taken under review by the courts, and a decision is expected early in 1985. Current policy dictates BLM will hold all or a portion of water rights on range improvement projects where Federal funds are expended.

Management of allotments that include checkerboard lands and/or small acreages of public lands are a concern of both the Elko Resource Area staff and the range users. Effective management practices and benefits derived in these areas of mixed ownership do not always warrant the expenditure of Federal funds.

Most seedings within the Elko Resource Area were established between 1950 and 1970. The encroachment of sagebrush into these areas after their establishment has been a slow process, however, sufficient amounts of sagebrush now warrant maintenance of the seedings. Control of sagebrush will be required on all established seedings within the next 20 years to maintain production levels and to protect the original investment.

Protection of riparian areas, wetlands, and meadows from damage is a primary concern of the Elko Resource Area, and continued emphasis will be placed in these areas.

The initiation of grazing systems will aid in a more even distribution of livestock use and improved range conditions. The construction of additional interior fences and water developments will be required.

Input by range users and information from the Elko District wild horse and burro specialist indicate present levels of wild horses within the resource area are acceptable. However, maintaining current numbers will most likely require control sometime in the near future.

Wildfires that occur throughout the West are part of the natural inhibiter of vegetal climax. Fire temporally eliminates brush species and allows for an increase in grass production by reducing competition. Suppression of wildfire, in areas that have the potential to provide an increase in forage, should be curtailed and transformed through limited suppression or controlled burn situations.

The increase in production of forage for livestock, through seedings, has been successful in the past for the Elko Resource Area. Future demands can also be met in this way. This action would also lessen competition for wildlife species on native vegetation by providing early season forage for livestock. The amount of proposed seeding will be dependent on future demands, available funding levels and multiple use objectives.

Adjustments in active preference for livestock will be made by allotment, when adequate monitoring study data is available. This action will serve to properly regulate usage to appropriate levels for a sustained yield multiple use concept.

Toxic plants in the resource area have been attributed to the loss of calf crop. Spray projects by the Bureau have aided in alleviating this problem. Consultation with the Elko County Extension Office indicates its program would be more cost-effective than BLM's, and a possible cooperative agreement is being studied.

5. Opportunities for Changes in Management Practices

The grouping of allotments by selective management, as outlined in Washington Office Instruction Memorandum No. 82-292, has been completed. Consultation with range users on this initial categorization indicates that most agree with the assigned categories.

Potential changes in management practices for individual allotments are shown on Table 10 in the Livestock Appendix. Areas addressed include: Adjustments in carrying capacity or season of use, effectiveness of a grazing system, implementation of range improvements, problems with landownership patterns, and the presence of inter-resource conflicts.

LIVESTOCK APPENDIX

TABLE 1

CATEGORIZATION OF ALLOTMENTS

Allot. No.	Allotment Name	Adequacy of Existing Projects 1/	Potential Economic Returns for new R.I. Work 2/	Degree of Resource Conflicts 3/	Land-ownership Objectives 4/	Management vs Objectives 5/	Need for MGT Plan 6/	Existing Ecological Condition 7/	Final Category
1024	Owyhee	I	I	M	M	C	I	I	I
1037	YP	M	M	C	M	M	M	M	M
1019	Owyhee Petan	I	M	C	M	I	M	M	M
1015	Indian Creek FFR	C	C	C	C	C	C	C	C
1039	VN Pocket Petan	M	M	C	C	M	M	M	M
1033	VN Pocket Allied	M	I	C	M	M	M	I	M
1006	Cornucopia	M	M	C	I	M	I	M	M
1001	Andrae	I	I	C	I	M	I	M	M
1035	Wilson Mountain	M	I	C	M	M	M	M	M
1017	Lime Mountain	C	I	I	C	M	I	I	M
1022	Mori	I	I	C	C	M	M	M	M
1002	Bucket Flat	M	C	C	C	C	I	M	C
1025	Rock Creek	I	I	M	C	I	I	I	I
1038	Midas	C	C	I	C	I	C	M	C
1018	Little Humboldt	I	I	M	I	M	M	M	M
1032	Twenty Five	M	M	M	M	M	M	M	M
1031	Tuscarora	I	M	C	C	I	M	M	M
1026	Six Mile	I	I	C	I	M	M	M	I
1014	Taylor Canyon	M	M	C	C	M	M	M	M
1008	Eagle Rock	M	M	M	C	M	M	M	M
2125	Wildhorse Group	M	I	M	I	I	M	I	I
2121	Rough Hills	C	C	M	C	M	C	C	C
2130	Stone Flat FFR	C	C	C	C	C	C	C	C
2102	Annie Creek	I	M	C	I	C	M	M	M
2105	Bruneau River	M	M	M	I	M	C	C	M
2119	Rattlesnake Canyon	I	M	M	I	M	M	M	M
2123	Stone Flat	C	C	M	I	C	M	C	C
2110	Four Mile	M	M	C	I	M	M	M	M
2103	Beaver Creek	M	M	M	I	M	M	M	M
2115	Mason Mountain	M	C	M	M	M	M	M	M
2117	Mexican Field	M	C	I	I	M	I	M	I
2107	Cotant	I	M	M	I	I	I	I	I
2109	Double Mountain	I	I	M	I	I	I	I	I
2122	Sheep Creek	I	I	I	I	I	M	M	I
2114	Mahala Creek	C	C	M	I	C	M	M	C
2108	Eagle Rock 1	M	M	M	C	I	M	I	I
2113	Lone Mountain	M	M	C	I	M	M	M	M
2111	Fox Springs	C	C	C	C	I	I	I	M
2106	Coal Mine Basin	M	M	C	I	C	C	M	M
2118	North Fork Group	I	I	M	I	I	I	I	I
2134	Dorsey	I	M	C	C	I	M	M	M
2133	Long Field	C	C	C	C	C	C	C	C
2112	Halleck	C	C	C	C	C	C	M	C
2101	Adobe Hills	I	I	I	I	C	M	M	I

TABLE 1 (cont.)

Allot. No.	Allotment Name	Adequacy of Existing Projects 1/	Potential Economic Returns for new R.I. Work 2/	Degree of Resource Conflicts 3/	Land-ownership Objectives 4/	Management vs Objectives 5/	Need for MGT Plan 6/	Existing Ecological Condition 7/	Final Category
2124	White Rock	M	C	C	I	M	C	C	C
2129	Adobe	C	C	C	C	C	C	C	C
2104	Blue Basin	I	I	M	I	I	I	I	I
2128	Dry Susie	C	C	C	C	M	C	M	C
2126	Carlin Canyon	C	C	C	C	C	C	C	C
1005	Carlin Field	I	I	M	I	C	I	I	I
1011	Hadley	I	I	M	I	I	I	I	I
1003	Taylor's Carlin	C	C	C	C	C	C	C	C
1020	Mary's Mountain	M	M	I	C	C	I	M	C
1027	T Lazy S	I	I	M	C	I	I	I	I
1036	Argenta	I	M	M	I	C	C	C	C
1012	Horseshoe	I	I	M	C	C	I	I	I
1021	Palisade	M	C	M	C	M	C	C	C
5446	Pine Mountain	I	I	M	I	I	I	M	I
5430	Iron Blossom	M	M	M	M	M	M	M	M
5456	Safford Canyon	I	I	C	I	M	M	I	I
5459	Scotts Gulch	M	I	M	I	I	M	I	I
5423	Geyser	I	I	C	C	C	M	C	C
5467	Thomas Creek	M	I	C	M	M	M	C	M
5483	Thomas Creek FFR	C	C	C	C	C	C	C	C
5412	Devils Gate	C	C	C	C	C	C	C	C
5465	South Buckhorn	I	I	M	I	I	I	I	I
5448	Potato Patch	M	M	C	M	M	M	M	M
5445	Pine Creek	C	C	C	M	C	C	C	C
5439	Mineral Hill	M	M	M	M	M	M	M	M
5473	Union Mountain	I	C	I	I	I	I	I	I
5405	Bruffy	M	M	M	C	C	M	C	C
5447	Pony Creek	M	I	I	C	M	M	M	M
5429	Indian Springs	M	I	M	I	I	M	M	I
5414	Dixie Flats	M	C	I	M	I	M	I	I
5417	Emmigrant Springs	I	I	M	M	I	M	I	I
5468	Tonka	I	I	M	M	I	M	I	I
5442	Old Eight FFR	C	C	C	C	C	C	C	C
5422	Grindstone Mountain	I	I	M	M	I	M	I	I
5411	Cut Off	C	C	C	M	I	M	I	I
5406	Bullion Road	I	I	I	C	I	M	M	I
5466	Ten Mile	I	I	M	M	I	M	I	I
5420	Four Mile Canyon	I	C	I	C	I	C	I	C
5408	Burner Basin	C	C	C	C	I	C	C	C
5416	Elko Hills	M	I	M	M	I	M	M	I
5415	East Fork	I	I	M	M	I	M	I	I
2131	East Fork FFR	C	C	C	C	C	C	C	C
5407	Burger Creek	C	C	C	C	C	C	M	C
5463	Smiraldo	I	I	M	C	I	M	I	I
5432	King Seeding	I	I	M	C	M	M	M	M
5427	Horsefly	I	I	C	C	I	M	M	I

TABLE 1 (cont.)

Allot. No.	Allotment Name	Adequacy of Existing Projects 1/	Potential Economic Returns for new R.I. Work 2/	Degree of Resource Conflicts 3/	Land-ownership Objectives 4/	Management vs Objectives 5/	Need for MGT Plan 6/	Existing Ecological Condition 7/	Final Category
5425	Heelfly	C	C	C	C	M	C	M	C
5460	Secret	I	I	C	C	M	C	I	C
5449	Rabbit Creek	M	I	M	C	I	C	C	C
5431	Kennedy Seeding	I	I	M	M	I	M	M	I
5474	Walther	M	C	C	M	I	C	M	C
5443	Palacio Seeding	M	I	M	M	I	M	M	I
5457	Sandhill North	M	C	I	C	I	M	I	I
5458	Sandhill South	I	I	C	C	I	C	I	C
5403	Bellinger	I	I	M	M	I	M	M	C
5426	Hog Tommy	I	I	C	M	I	M	I	I
5404	Bottari Seeding	I	I	M	M	I	M	M	I
5441	Olgivie - Orbe	M	I	M	M	I	M	M	I
5485	LDS FFR	C	C	C	C	C	C	C	C
5461	Shoshone	I	I	M	C	I	M	I	I
5409	Chimney Creek	M	M	C	C	M	M	M	M
5469	Twin Bridges	I	I	M	C	I	M	I	C
5453	River	I	I	M	M	I	M	I	I
5433	LDS	M	I	M	C	I	M	M	I
5436	McMullen FFR	M	C	C	C	C	C	I	C
5464	South Fork	I	I	M	C	I	M	I	I
5438	Crane Springs	I	I	M	M	I	M	M	I
5413	Dixie Creek	M	I	C	M	I	M	I	I
5462	Sleeman	I	I	M	M	I	M	I	I
5424	Hansel	I	I	M	M	I	M	I	I
5484	Wilson FFR	C	C	C	C	C	C	C	C
5475	Willow	M	I	M	M	I	M	I	I
5477	Willow Creek Pockets	I	I	M	M	I	M	I	I
5480	Cottonwood FFR	M	C	M	C	M	C	M	C
5437	Merkley-Zunino	I	I	M	C	I	M	M	I
5401	Achurra	M	M	M	M	M	M	M	M
5402	Barnes Seeding	M	M	M	M	M	M	M	M
5418	Barnes FFR	C	C	C	C	C	C	C	C
5478	Little Porter FFR	C	C	C	C	C	C	C	C
5486	Robinson Mtn. FFR	C	C	C	C	C	C	C	C
5455	Robinson Mountain	I	I	M	M	I	M	M	I
5435	Little Porter	I	I	M	M	I	M	I	I
5454	Robinson Creek	I	I	M	M	I	M	I	I
5421	Frost Creek	M	C	M	M	M	M	M	M
5479	Corta FFR	C	C	C	C	C	C	C	C
5410	Corral Canyon	M	C	C	M	M	M	M	I
5482	Forest FFR	C	C	C	C	C	C	C	C
5444	Pearl Creek	M	I	M	M	I	M	I	I
5451	Rattlesnake Mtn.	M	C	C	I	I	C	M	C
5434	Lindsay Creek	I	I	M	M	I	M	I	I
5471	Twin Creek North	I	I	M	M	I	M	I	I
5470	Twin Creek East	M	I	M	M	I	M	M	M

Allot. No.	Allotment Name	Adequacy of Existing Projects 1/	Potential Economic Returns for new R.I. Work 2/	Degree of Resource Conflicts 3/	Land-ownership Objectives 4/	Management vs Objectives 5/	Need for MGT Plan 6/	Existing Ecological Condition 7/	Fin Cat
5472	Twin Creek South	I	I	M	M	I	M	I	I
5419	Merkley FFR	C	C	C	C	C	C	C	C
5452	Red Rock	I	I	M	M	I	M	I	I
5450	Browne	I	I	M	M	I	M	M	I
5440	Mitchel Creek	I	I	M	M	I	M	I	I

1./ Existing Range Improvements.

M. Existing range improvements are adequate or essentially so. The primary concern is with maintaining existing projects.

I. Existing range improvements are inadequate. Redesign and/or removal of existing projects and development of new ones is required.

C. Due to management objectives, existing projects will be maintained or removed with no new projects planned.

2./ Potential New Range Improvements and Vegetation Manipulations

M. The potential is moderate to high for a positive economic return on public investment and it is cost effective.

I. The potential is moderate to high for a positive economic return on public investment and it is cost effective.

C. A low or no potential exists for a positive economic return on public investment.

3./ Resource Conflicts.

M. There are resource conflicts but they can be corrected with minimal effort.

I. There are one or more major resource conflicts present and they must be responsive to or correctible through management.

C. Due to management objectives, resource conflicts are minor or not an issue.

4./ Land Ownership Objectives.

M. The public lands will be maintained at this present state.

I. When called for in the planning system, public lands will be retained/consolidated to meet future management goals.

C. When called for in the planning system, the allotments where all or a major portion of the public lands have been identified for disposal, will be disposed of by exchange, sale or other appropriate land laws.

5./ Present Management.

M. Livestock distribution is good. All areas are being used proportionately. The current level of use by all grazing animals is satisfactory.

I. Livestock distribution is poor to fair. Not all of the areas are being used proportionately. The current level of use by all grazing animals may exceed what the resource can support.

C. Livestock distribution is poor to good. All areas with the potential for use, may or may not be used proportionately. The current level of use by all grazing animals may or may not be satisfactory.

6./ Activity Plans.

M. The present plan if implemented is acceptable or generally acceptable as it exists. Minor modifications to resolve resource conflicts may be required. No physical problems exist to implement a new plan at the present time if one is required.

I. The present plan if implemented is deficient and requires modification to resolve resource conflicts. There are physical problems such as range improvements that are inhabiting implementation of a new plan at the present time if one is required.

C. The present plan if implemented should remain as exists unless minor modifications to resolve resource conflicts are required. Resource objectives inhibit new plans to be implemented.

7./ Existing Ecological Range Condition, Trend, Watershed Condition, and Climax Potential.

M. The current condition is satisfactory. The primary concern is with maintaining existing conditions that are static or improving. The average potential is moderate to high.

I. The current condition is unsatisfactory. The primary concern is with stabilizing any downward trends and improve where cost effective. The average potential is moderate to high.

C. The present condition is not a factor. The average potential is low to moderate.

TABLE 2

ACRES OF VEGETATION SITE, BY ALLOTMENT

Allotment	Ecological Site Number 1	2	3	4	5	6	7	8	9	10

TABLE 3

MAJOR ECOLOGICAL SITES

Major Ecological Sites		Dominant Plant Species
1	Moist Floodplain 6-10" p.z.*	creeping wildrye, Great Basin wildrye, willow
2	Loamy Bottom 8-14" p.z.	Great Basin wildrye, basin big sagebrush, Nevada Bluegrass
3	Wet Meadow 10-16" p.z.	hairgrass, Nevada Bluegrass, willow
4	Dry Meadow 10-16" p.z.	Nevada Bluegrass, timothy, willow
5	Upland Browse 12-16" p.z.	antelope bitterbrush, bluebunch wheatgrass, Idaho fescue
6	South Slope 12-14" p.z.	bluebunch wheatgrass, antelope bitterbrush, mountain big sagebrush
7	Steep North Slope 16+" p.z.	Idaho fescue, bluebunch wheatgrass, antelope bitterbrush, mountain big sagebrush
8	Loamy Slope 10-16" p.z.	bluebunch wheatgrass, Idaho fescue, antelope bitterbrush, mountain big sagebrush
9	Loamy 10-12" p.z.	bluebunch wheatgrass, Thurber's needlegrass, basin big sagebrush
10	South Slope 8-12" p.z.	bluebunch wheatgrass, Thurber's needlegrass, Wyoming big sagebrush
11	Claypan 12-16" p.z.	bluebunch wheatgrass, Idaho fescue, low sagebrush
12	Claypan 10-12" p.z.	bluebunch wheatgrass, Webber's ricegrass, Thurber's needlegrass, early or low sagebrush
13	Loamy 8-10" p.z.	bluebunch wheatgrass, Thurber's needlegrass, Wyoming big sagebrush
14	Mountain Ridge 16+" p.z.	Idaho fescue, Webber's ricegrass, low or black sagebrush
15	Chalky Knoll 8-10" p.z.	Indian ricegrass, black sagebrush, Wyoming big sagebrush
16	Dry Floodplain 6-10" p.z.	Great Basin wildrye, basin big sagebrush
17	Saline Bottom 6-10" p.z.	Great Basin wildrye, alkali sacaton, greasewood

* p.z. = precipitation zone

TABLE 4

ECOLOGICAL RANGE CONDITION, BY ALLOTMENT
(ACRES)

Map Reference No.	Allotment No.	Allotment	Potential Productivity	High Seral	Mid Seral	Low Seral

TABLE 5

SEASON OF USE, AMP STATUS AND OBSERVED APPRENT TREND

Allot.	Allotment Name	From	To	AMP	Trend
1024	Owyhee	03/01	02/28	NO	
1037	YP	04/16	12/15	NO	
1019	Owyhee-Petan	08/21	10/10	NO	
1015	Indian Creek FFR	05/01	02/21	NO	
1039	VN Pocket Petan	05/01	07/31	NO	
1033	VN Pocket Allied	04/16	06/15	NO	
1006	Cornucopia	05/01	02/28	NO	
1001	Andrae	04/16	10/31	NO	
1035	Wilson Mountain	06/01	06/30	NO	
1017	Lime Mountain	05/01	10/31	NO	
1022	Mori	03/01	02/28	YES	Static to Upward
1002	Bucket Flat	05/01	11/30	NO	
1025	Rock Creek	04/15	11/15	NO	
1038	Midas	04/20	09/19	NO	
1018	Little Humboldt	04/10	10/15	NO	
1032	Twenty-Five	03/01	02/28	YES	Static
1031	Tuscarora	04/01	02/29	NO	
1026	Six Mile	05/01	07/30	YES	Static
1014	Taylor Canyon	04/16	02/15	YES	Static to Upward
1008	Eagle Rock	04/16	02/28	YES	Static to Upward
2125	Wildhorse Group	04/20	11/20	NO	
2121	Rough Hills	05/01	09/30	NO	
2130	Stone Flat FFR	05/01	05/31	NO	
2102	Annie Creek	05/01	10/15	NO	
2105	Bruneau River	05/01	08/15	YES	
2119	Rattlesnake Canyon	05/03	09/07	NO	
2123	Stone Flat	05/01	09/15	NO	
2110	Four Mile	04/15	10/31	NO	
2103	Beaver Creek	04/15	10/14	NO	
2115	Mason Mountain				
2117	Mexican Field	06/01	09/15	NO	
2107	Cotant	05/01	06/30	NO	
2109	Double Mountain	04/21	09/30	NO	
2122	Sheep Creek	04/16	08/31	NO	
2114	Mahala Creek	05/15	11/01	NO	
2108	Eagle Rock 1	05/01	10/16	NO	
2113	Lone Mountain	04/15	10/15	NO	
2111	Fox Springs	04/16	09/30	NO	
2106	Coal Mine Basin	04/21	09/30	NO	
2118	North Fork Group	04/10	10/30	NO	
2134	Dorsey	04/10	07/27	YES	
2133	Long Field	05/01	07/04	NO	
2112	Halleck	05/01	07/15	NO	
2101	Adobe Hills	04/16	11/15	YES	
2124	White Rock	04/01	10/01	NO	
2129	Adobe	05/01	11/15	NO	
2104	Blue Basin	04/01	11/15	YES	
2128	Dry Susie	08/01	09/30	NO	

TABLE 5 (cont.)

Allot.	Allotment Name	From	To	AMP	Trend
2126	Carlin Canyon	05/01	02/28	NO	
1005	Carlin Field	05/01	05/31	NO	
1011	Hadley	07/01	11/01	NO	
1003	Taylor's Carlin	04/16	10/05	NO	
1020	Mary's Mountain	04/16	10/15	NO	
1027	T Lazy S	03/16	12/31	NO	
1036	Argenta	04/16	08/10	NO	
1012	Horseshoe	04/01	08/31	NO	
1021	Palisade	04/16	12/03	NO	
5446	Pine Mountain	04/15	11/15	NO	
5430	Iron Blossom	04/16	10/31	NO	
5456	Safford Canyon	04/16	11/30	NO	
5459	Scotts Gulch	04/10	08/04	NO	
5423	Geyser	04/01	09/30	NO	
5467	Thomas Creek	04/16	09/15	NO	
5483	Thomas Creek FFR	04/16	02/15	NO	
5412	Devil's Gate	04/16	11/21	NO	
5465	South Buckhorn	04/16	12/15	NO	
5448	Potato Patch	04/01	11/24	NO	
5445	Pine Creek	12/01	12/31	NO	
5439	Mineral Hill	04/01	12/31	NO	
5472	Union Mountain				
5405	Bruffy	04/16	11/15	NO	
5447	Pony Creek	04/16	11/12	NO	
5429	Indian Springs	04/01	11/10	NO	
5414	Dixie Flats	05/01	10/31	NO	
5417	Emmigrant Springs	05/01	05/30	NO	
5468	Tonka	05/01	10/31	NO	
5442	Old Eighty FFR	09/01	11/30	NO	
5422	Grindstone Mountain	05/01	05/30	NO	
5411	Cut-Off	05/16	07/30	NO	
5406	Bullion Road	05/01	08/28	NO	
5466	Ten Mile	05/01	05/30	NO	
5420	Four Mile Canyon	05/01	11/30	NO	
5408	Burner Basin	05/01	08/01	NO	
5416	Elko Hills	04/01	11/16	NO	
5415	East Fork	04/15	09/15	NO	
2131	East Fork FFR	05/01	05/31	NO	
5407	Burger Creek	03/01	12/31	NO	
5463	Smiraldo	06/01	07/31	NO	
5432	King Seeding	06/17	08/05	NO	
5427	Horsefly	05/01	09/07	NO	
5425	Heelfly	04/15	06/01	NO	
5460	Secret	05/01	05/31	NO	
5449	Rabbit Creek	04/16	08/02	NO	
5431	Kennedy Seeding	05/01	06/30	NO	
5474	Walther	06/01	10/12	NO	
5443	Palacio Seeding	05/01	07/29	NO	

TABLE 5 (cont.)

Allot.	Allotment Name	From	To	AMP	Trend
5457	Sandhill North	05/01	08/15	NO	
5458	Sandhill South	05/03	08/14	NO	
5403	Bellinger	05/01	07/25	NO	
5426	Hog Tommy	05/15	10/14	NO	
5404	Bottari Seeding	05/01	07/15	NO	
5441	Olgivie-Orbe	05/01	08/09	NO	
5485	LDS FFR	06/02	07/11	NO	
5461	Shoshone	05/01	12/16	NO	
5409	Chimney Creek	05/01	11/30	NO	
5469	Twin Bridges	04/16	11/08	NO	
5453	River	05/01	05/30	NO	
5433	LDS	04/16	06/01	NO	
5436	McMullen FFR	04/15	05/15	NO	
5464	South Fork	05/01	07/31	NO	
5438	Crane Springs	05/01	09/30	NO	
5413	Dixie Creek	06/01	11/17	NO	
5462	Sleeman	05/01	09/20	NO	
5424	Hansel	05/10	10/01	NO	
5484	Wilson FFR	05/01	07/23	NO	
5475	Willow	04/15	05/31	NO	
5477	Willow Creek Pockets	05/01	10/03	NO	
5480	Cottonwood FFR	06/30	10/31	NO	
5437	Merkley-Zunino	05/01	06/16	NO	
5401	Achurra	05/09	08/27	YES	Static
5402	Barnes Seeding	04/20	05/30	NO	
5418	Barnes FFR	04/16	11/30	NO	
5478	Little Porter FFR	05/01	05/31	NO	
5486	Robinson Mountain FFR	05/01	05/31	NO	
5455	Robinson Mountain	04/20	10/27	NO	
5435	Little Porter	04/16	06/30	NO	
5454	Robinson Creek	05/01	10/31	NO	
5421	Frost Creek	04/15	06/30	YES	Static
5479	Corta FFR	05/16	09/10	NO	
5410	Corral Canyon	05/01	08/31	NO	
5482	Forest FFR	05/01	06/30	NO	
5444	Pearl Creek	04/16	10/30	NO	
5451	Rattlesnake Mountain	05/15	09/30	NO	
5434	Lindsay Creek	05/01	10/30	NO	
5471	Twin Creek North	06/01	09/09	YES	Static
5470	Twin Creek East	04/16	07/01	NO	
5472	Twin Creek South	04/23	09/22	NO	
5419	Merkley FFR	09/18	12/02	NO	
5452	Red Rock	04/18	12/04	NO	
5450	Browne	05/16	09/15	NO	
5440	Mitchel Creek	04/16	10/30	NO	

TABLE 6

POISONOUS PLANTS OF THE ELKO RA

Common Name	Scientific Name
Greasewood	Sarcobatus vermiculatus
Halogeton	Halogeton glomeratus
Horsebrush	Tetradymia glabrata
Larkspur	Delphinium spp.
Lupine	Lupinus spp.
Locoweed	Astragalas spp.
Chokecherry	Prunus virginiana
Death camas	Zigadenus paniculatus and Z. venenosus
Horsetail	Equisetum spp.
Water hemlock	Cicuta douglasii

SOURCE: Bureau of Land Management Files

TABLE 7

ALLOTMENT ACREAGES

ALLOTMENT NO.	ALLOTMENT NAME	PUBLIC LAND	PRIVATE LAND	TOTAL ACREAGE
1024	Owyhee	339,180	5,514	344,694
1037	YP	93,635	1,932	95,567
1019	Owyhee-Petan	10,221	689	10,910
1015	Indian Creek FFR	4,924	0	4,924
1039	VN Pocket Petan	7,419	7,028	14,447
1033	VN Pocket Allied	7,444	534	7,978
1006	Cornucopia	15,072	4,777	19,849
1001	Andrae	16,324	2,274	18,598
1035	Wilson Mountain	2,362	800	3,162
1017	Lime Mountain	9,094	9,080	18,174
1022	Mori	9,858	1,501	11,359
1002	Bucket Flat	1,730	690	2,420
1025	Rock Creek	347,477	133,881	481,358
1038	Midas	4,643	2,904	7,547
1018	Little Humboldt	60,018	16,947	76,965
1032	Twenty-five	284,651	192,103	476,754
1031	Tuscarora	57,119	68,471	125,590
1026	Six Mile	901	0	901
1014	Taylor Canyon	8,663	4,401	13,064
1008	Eagle Rock	33,600	4,780	38,380
2125	Wildhorse Group	31,102	39,658	70,760
2121	Rough Hills	4,902	837	5,739
2130	Stone Flat FFR	311	0	311
2102	Annie Creek	2,954	899	3,853
2105	Bruneau River	3,347	1,122	4,469
2119	Rattlesnake Canyon	10,312	308	10,620
2123	Stone Flat	2,561	1,137	3,698
2110	Four Mile	36,062	6,438	42,500
2103	Beaver Creek	75,332	9,423	84,755
2115	Mason Mountain	2,774	2,287	5,061
2117	Mexican Field	2,884	469	3,353
2107	Cotant	3,219	613	3,832
2109	Double Mountain	39,620	1,651	41,271
2122	Sheep Creek	8,278	819	9,097
2114	Mahala Creek	13,095	8,528	21,623
2108	Eagle Rock 1	9,146	154	9,300
2113	Lone Mountain	31,969	17,234	49,203
2111	Fox Springs	5,196	6,250	11,446
2106	Coal Mine Basin	7,686	8,497	16,183
2118	North Fork Group	125,634	78,484	204,118
2134	Dorsey	3,782	4,358	8,140
2133	Long Field	2,566	2,914	5,480
2112	Halleck	3,831	13,556	17,387
2101	Adobe Hills	41,092	41,844	82,936
2124	White Rock	5,232	4,945	10,177
2129	Adobe	2,898	1,155	4,053
2104	Blue Basin	35,474	13,718	49,192

TABLE 7

ALLOTMENT ACREAGES

ALLOTMENT NO.	ALLOTMENT NAME	PUBLIC LAND	PRIVATE LAND	TOTAL ACREAGE
2128	Dry Susie	5,630	48,946	54,576
2126	Carlin Canyon	275	881	1,156
1005	Carlin Field	16,978	5,244	22,222
1011	Hadley	30,969	63,596	94,565
1003	Taylor's Carlin	62	248	310
1020	Mary's Mountain	15,371	18,845	34,216
1027	T Lazy S	71,363	99,227	170,590
1036	Argenta	13,080	12,622	25,702
1012	Horseshoe	17,097	14,696	31,793
1021	Palisade	11,233	10,904	22,137
5446	Pine Mountain	27,337	33,482	60,819
5430	Iron Blossom	7,573	7,610	15,183
5456	Safford Canyon	5,305	4,916	10,221
5459	Scotts Gulch	10,654	12,513	23,167
5423	Geyser	33,555	39,485	73,040
5467	Thomas Creek	4,762	13,785	18,547
5483	Thomas Creek FFR	130	0	130
5412	Devils Gate	2,987	12,082	15,069
5465	South Buckhorn	226,706	93,513	320,219
5448	Potato Patch	3,479	66	3,545
5445	Pine Creek	12,601	62	12,663
5439	Mineral Hill	24,884	1,037	25,921
5473	Union Mountain	22,589	644	23,233
5405	Bruffy	18,434	428	18,862
5447	Pony Creek	15,219	1,295	16,514
5429	Indian Springs	19,251	14,465	33,716
5414	Dixie Flats	8,319	5,957	14,276
5417	Emmigrant Springs	14,150	11,752	25,902
5468	Tonka	17,223	7,083	24,306
5442	Old Eighty FFR	93	571	664
5422	Grindstone Mountain	7,415	7,032	14,447
5411	Cut-Off	2,114	3,314	5,428
5406	Bullion Road	4,603	2,960	7,563
5466	Ten Mile	5,896	4,232	10,128
5420	Four Mile Canyon	4,557	6,338	10,895
5408	Burner Basin	1,282	6,581	7,863
5416	Elko Hills	7,415	6,225	13,640
5415	East Fork	11,233	5,297	16,530
2131	East Fork FFR	235	0	235
5407	Burger Creek	240	0	240
5463	Smiraldo	3,019	0	3,019
5432	King Seeding	2,283	0	2,283
5427	Horse Fly	3,353	914	4,267
5425	Heelfly	378	184	562
5460	Secret	467	309	776
5449	Rabbit Creek	4,889	4,000	8,889
5431	Kennedy Seeding	1,588	0	1,588

TABLE 7

ALLOTMENT ACREAGES

ALLOTMENT NO.	ALLOTMENT NAME	PUBLIC LAND	PRIVATE LAND	TOTAL ACREAGE
5474	Walther	136	284	420
5443	Palacio Seeding	1,120	0	1,120
5457	Sandhill North	1,227	1,190	2,417
5458	Sandhill South	593	802	1,395
5403	Bellinger	2,344	33	2,377
5426	Hog Tommy	1,976	12	1,988
5404	Bottari Seeding	2,426	316	2,787
5441	Olgivie - Orbe	7,968	0	7,968
5485	LDS FFR	294	0	294
5461	Shoshone	8,867	2,678	11,545
5409	Chimney Creek	5,488	232	5,720
5469	Twin Bridges	3,462	573	4,035
5453	River	3,599	3,446	7,045
5433	LDS	1,088	543	1,631
5436	McMullen FFR	108	2,219	2,327
5464	South Fork	2,932	636	3,568
5438	Crane Springs	21,283	5,627	26,910
5413	Dixie Creek	47,202	27,468	74,670
5462	Sleeman	4,966	0	4,966
5424	Hansel	10,870	699	11,569
5484	Wilson FFR	985	219	1,204
5475	Willow	5,265	1,257	6,522
5477	Willow Creek Pockets	7,205	833	8,038
5480	Cottonwood FFR	293	987	1,280
5437	Merkley-Zunino	2,192	148	2,340
5401	Achurra	2,152	24	2,176
5402	Barnes Seeding	3,860	105	8,965
5418	Barnes FFR	164	0	164
5478	Little Porter FFR	97	175	272
5486	Robinson Mountain FFR	304	0	304
5455	Robinson Mountain	155	225	380
5435	Little Porter	3,811	257	4,068
5454	Robinson Creek	15,093	132	15,225
5421	Frost Creek	10,057	385	10,442
5479	Corta FFR	144	1,719	1,863
5410	Corral Canyon	2,002	169	2,171
5482	Forest FFR	525	0	525
5444	Pearl Creek	1,485	0	1,485
5451	Rattlesnake Mountain	641	0	641
5434	Lindsay Creek	9,706	0	9,706
5471	Twin Creek North	2,963	151	3,114
5470	Twin Creek East	2,036	228	2,264
5472	Twin Creek South	1,570	19	1,589
5419	Merkley FFR	3,474	2,932	6,406
5452	Red Rock	60,926	3,003	63,929
5450	Browne	17,430	280	17,710
5440	Mitchell Creek	18,527	525	19,052
TOTAL		2,844,881	1,369,521	4,214,402

TABLE 8
ELKO RESOURCE AREA
PREFERENCE SUMMARY, BY ALLOTMENT

	ALLOTMENT No.	ALLOTMENT NAME	ACTIVE AUMS	SUSPENSE NONUSE AUMS	TOTAL AUMS	AVE. ACT. USE IN AUMS 1/	AVC LICENSED USE AUMS 2/	MAP REFERENCE NUMBER
+	1024	Owyhee	30225	1692	31917	14917	18344	1
	1037	YP Allotment	13023	0	13023	9468	11494	2
	1019	Petan Owyhee Unit	2094	0	2094	1352	1632	3
	1015	Indian Creek FFR	854	0	854	496	854	4
	1039	VN Pocket Petan	983	0	983	640	626	5
	1033	VN Pocket Allied	1311	0	1311	1130	1072	6
	1006	Coinucopia	2634	1138	3772	1478	2022	7
	1001	Andrae	4564	94	4658	4045	4489	8
	1035	Wilson Mtn.	308	0	308	203	246	9
	1017	Lime Mtn.	1832	813	2645	849	1180	10
	1022	Mori	2245	0	2245	2352	2432	11
	1002	Bucket Flat	188	113	301	171	140	12
	1025	Rock Creek	48997	19677	68674	36189	41859	13
	1038	Midas	711	237	948	650	711	14
	1018	Little Humboldt	7656	2600	10256	7101	7649	15
+	1032	Twenty Five	34179	13829	48008	14077	20148	16
	1031	Tuscarora	14267	6970	21237	12358	14121	17
	1026	Six Mile	184	79	263	201	223	18
	1014	Taylor Canyon	2340	489	2829	2005	2107	19
	1008	Eagle Rock	5824	1265	7089	4945	5895	20
	2125	Wildhorse Group	5201	0	5201	1479	3778	21
	2121	Rough Hills	887	0	887	474	670	22
	2130	Stone Flat FFR	41	0	41	41	38	23
	2102	Annie Creek	592	0	592	581	592	24
	2105	Bruneau River	838	0	838	549	454	25
	2119	Rattlesnake Canyon	2591	0	2591	2095	2218	26
	2123	Stone Flat	717	0	717	588	582	27
	2110	Four Mile	6979	0	6979	3406	5315	28
	2103	Beaver Creek	15037	2594	17631	3203	3200	29
	2115	Mason Mountain	370	0	370	370	370	30
	2117	Mexican Field	546	0	546	505	429	31
	2107	Cotant	832	0	832	706	685	32
	2109	Double Mountain	5126	0	5126	5126	4464	33
	2122	Sheep Creek	1572	0	1572	1212	1120	34
	2114	Mahala Creek	1825	275	2100	1157	1323	35
	2108	Eagle Rock 1	1391	291	1682	1290	1170	36
	2113	Lone Mountain	7202	2196	9398	5445	6358	37
	2111	Fox Springs	626	203	829	676	672	38
			226792	54555	281347	144529	170692	

TABLE 8 (Continued)
ELKO RESOURCE AREA
PREFERENCE SUMMARY, BY ALLOTMENT

ALLOTMENT No.	ALLOTMENT NAME	ACTIVE AUMS	SUSPENSE NONUSE AUMS	TOTAL AUMS	AVE. ACT. USE IN AUMS 1/	AVC LICENSED USE AUMS 2/	MAP REFERENCE NUMBER
2106	Coal Mine Basin	1471	0	1471	868	414	39
2118	North Fork Group	15964	0	15964	10202	7100	40
2134	Dorsey	1024	0	1024	1889	1270	41
2133	Long Field	209	0	209	260	209	42
2112	Halleck	643	0	643	426	382	43
2101	Adobe Hills	3526	0	3526	3485	3571	44
2124	White Rock	795	0	795	590	804	45
2129	Adobe	526	224	750	397	525	46
2104	Blue Basin	6467	2774	9241	551	4593	47
2128	Dry Susie	929	0	929	833	930	48
2126	Carlin Canyon	51	23	74	52	52	49
1005	Carlin Field	2445	1446	3891	1288	2036	50
1011	Hadley	5528	0	5528	3184	4045	51
1003	Taylors Carlin	28	8	36	28	29	52
1020	Mary's Mountain	1893	727	2620	2371	1528	53
1027	T Lazy S	15250	3236	18486	7139	15240	54
1036	Argenta	393	0	393	562	354	55
1012	Horseshoe	1630	0	1630	1656	1434	56
1021	Palisade	1336	791	2127	1257	783	57
5446	Pine Mountain	5554	2545	8099	5113	5187	58
5430	Iron Blossom	1539	575	2114	1203	1506	59
5456	Safford Canyon	1392	133	1525	1299	1396	60
5459	Scotts Gulch	1213	0	1213	1801	1211	61
5423	Geyser	1227	0	1227	1240	848	62
5467	Thomas Creek	1078	3628	4706	1138	981	63
5483	Thomas Creek FFR	60	0	60	60	60	64
5412	Devils Gate	374	154	528	1678	374	65
5465	South Buckhorn	20059	867	20926	13894	15852	66
5448	Potato Patch	764	0	764	744	754	67
5445	Pine Creek	150	0	150	150	150	68
5439	Mineral Hill	1555	457	2012	1274	1590	69
5473	Union Mountain	1759	497	2256	2256	2256	70
5405	Bruffy	1806	454	2260	1799	1856	71
5447	Pony Creek	1629	723	2352	1509	1678	72
5429	Indian Springs	2669	2597	5266	2534	3209	73
5414	Dixie Flats	1737	705	2442	1233	1752	74
5417	Emmigrant SPG	1458	490	1948	1456	1372	75
5468	Tonka	1626	754	2380	1277	1391	76
5442	Old Eighty FFR	12	0	12	12	12	77
5422	Grindstone	894	0	894	860	913	78
5411	Cut Off	349	162	511	106	99	79
		109012	23970	132982	79674	89746	

TABLE 8 (Continued)
ELKO RESOURCE AREA
PREFERENCE SUMMARY, BY ALLOTMENT

ALLOTMENT No.	ALLOTMENT NAME	ACTIVE AUMS	SUSPENSE NONUSE AUMS	TOTAL AUMS	AVE. ACT. USE IN AUMS 1/	AVC LICENSED USE AUMS 2/	MAP REFERENCE NUMBER
5406	Bullion Road	218	0	218	291	271	80
5466	Ten Mile	363	0	363	359	419	81
5420	Four Mile Canyon	595	415	1010	519	595	82
5408	Burner Basin	164	100	264	159	164	83
5416	Elko Hills	966	739	1705	740	937	84
5415	East Fork	1205	820	2025	767	767	85
2131	East Fork FFR	17	0	17	17	17	86
5407	Burger Creek	11	0	11	11	11	87
5463	Smiraldo	747	0	747	771	652	88
5432	King Seeding	521	0	521	524	648	89
5427	Horsefly	465	7	472	764	700	90
5425	Heelfly	66	0	66	50	91	91
5460	Secret	142	0	142	188	216	92
5449	Rabbit Creek	655	0	655	995	1075	93
5431	Kennedy Seeding	254	0	254	857	591	94
5474	Walther	47	0	47	55	47	95
5443	Palacio Seeding	326	0	326	372	366	96
5457	Sandhill North	330	230	560	25	331	97
5458	Sandhill South	74	0	74	66	91	98
5403	Bellinger	278	0	278	396	396	99
5426	Hog Tommy	167	0	167	170	167	100
5404	Bottari Seeding	511	0	511	633	623	101
5441	Olgivie-Orbe	1553	0	1553	1354	2225	102
5485	LDS FFR	119	0	119	119	119	103
5461	Shoshone	3443	555	3998	1655	1948	104
5409	Chimney Creek	2098	0	2098	1817	2155	105
5469	Twin Bridges	338	273	611	427	460	106
5453	River	210	222	432	359	209	107
5433	LDS	89	71	160	183	89	108
5436	McMullen FFR	39	0	39	43	39	109
5464	South Fork	592	0	592	596	598	110
5438	Crane Springs	1281	839	2120	1202	870	111
5413	Dixie Creek	4105	2421	6526	4774	5144	112
5462	Sleeman	1392	0	1392	886	996	113
5424	Hansel	1553	0	1553	1525	1652	114
5484	Wilson FFR	153	0	153	176	153	115
5475	Willow	546	0	546	364	433	116
5477	Willow Crk Pockets	675	1438	2113	512	629	117
5480	Cottonwood FFR	204	0	204	206	204	118
5437	Merkley Zunino	139	100	239	440	338	119
5401	Achurra	757	0	757	677	680	120
		27408	8230	35638	26044	28116	

TABLE 8 (Continued)
ELKO RESOURCE AREA
PREFERENCE SUMMARY, BY ALLOTMENT

ALLOTMENT No.	ALLOTMENT NAME	ACTIVE AUMS	SUSPENSE NONUSE AUMS	TOTAL AUMS	AVE. ACT. USE IN AUMS 1/	AVC LICENSED USE AUMS 2/	MAP REFERENCE NUMBER
5402	Barnes Seeding	399	0	399	291	385	121
5418	Barnes FFR	32	0	32	32	31	122
5478	Little Porter FFR	24	0	24	24	35	123
5486	Robinson Mtn FFR	36	0	36	36	36	124
5455	Robinson Mountain	3002	538	3540	3002	2011	125
5435	Little Porter	288	0	288	255	257	126
5454	Robinson Creek	2743	691	3434	1672	2146	127
5421	Frost Creek	1976	0	1976	2121	1844	128
5479	Corta FFR	92	0	92	92	84	129
5410	Corral Canyon	525	0	525	341	382	130
5482	Forest FFR	64	0	64	64	64	131
5444	Pearl Creek	468	0	468	464	478	132
5451	Rattlesnake Mtn.	145	0	145	166	144	133
5434	Lindsay Creek	1349	468	1817	1150	1355	134
5471	Twin Creek North	747	0	747	568	754	135
5470	Twin Creek East	646	0	646	651	596	136
5472	Twin Creek South	390	0	390	325	406	137
5419	Merkley FFR	250	0	250	250	259	138
5452	Red Rock	7503	1348	8851	5130	6578	139
5450	Browne	1307	673	1980	170	186	140
5440	Mitchell Creek	1301	106	1407	330	1023	141
	Subtotal	23287	3824	27111	17134	19054	
	GRAND TOTAL	386499	90579	477078	266382	307608	

Portions of these allotments are outside the Elko Resource Area boundary, but are administered by the Elko Resource Area

Allotments within the Elko Resource Area, but are not administered by the Elko Resource Area are listed below:

PEDROLI - NOQUE	A
LITTLE OWYHEE	B
BULLHEAD	C
JIGGS	D
PEARL CREEK FOREST	E

1/ Actual use data consists of an average of data available for that particular allotment.
2/ Average licensed use figures encompass available data and include temporary nonrenewable AUM's.

TABLE 9

RANGE IMPROVEMENTS FOR THE
ELKO RESOURCE AREA, BY ALLOTMENT

Map Reference Number	Allotment Number	Allotment Name	Spring Developments Number	Reservoirs Number	Wells Number	Pipelines Miles	Fences Miles	Cattleguard Number	Other Type	Other Number	Seedings Acres
1	1024	Owyhee	0	58	2	0	95	3	—	0	5000
2	1037	YP Allotment	0	12	0	0	18	0	—	0	0
3	1019	Petan Owyhee Unit	0	4	0	0	10	0	—	0	0
4	1015	Indian Creek FFR	0	0	0	0	0	0	—	0	0
5	1039	VN Pocket Petan	0	0	0	0	14	0	—	0	0
6	1033	VN Pocket Allied	0	0	0	0	14	0	—	0	6780
7	1006	Coinucopia	0	4	0	0	17	4	—	0	0
8	1001	Andrae	0	13	0	0	23	0	Corral	1	0
9	1035	Wilson Mountain	0	0	0	0	8	0	—	0	0
10	1017	Lime Mountain	2	12	0	0	11	0	—	0	0
11	1022	Mori	9	0	0	0	15	0	—	0	0
12	1002	Bucket Flat	0	0	0	0	8	0	—	0	0
13	1025	Rock Creek	2	10	3	2	115	3	—	0	9090
14	1038	Midas	0	0	0	0	8	0	—	0	0
15	1018	Little Humboldt	0	0	0	5	28	2	—	0	0
16	1032	Twenty Five	12	13	9	31	125	7	—	0	32523
17	1031	Tuscarora	5	0	0	1	144	0	—	0	5451
18	1026	Six Mile	0	0	1	2	3	0	—	-	800
19	1014	Taylor Canyon	0	0	0	0	0	0	—	0	0
20	1008	Eagle Rock	3	3	2	15	43	1	—	0	1800
21	2125	Wildhorse Group	0	0	0	0	63	3	—	0	0
22	2121	Rough Hills	0	0	0	0	0	0	—	0	0
23	2130	Stone Flat FFR	0	0	0	0	0	0	—	0	0
24	2102	Annie Creek	0	0	0	0	0	0	—	0	0
25	2105	Bruneau River	1	0	0	0	15	1	—	0	0
26	2119	Rattlesnake Canyon	9	3	3	0	21	2	—	0	0
27	2123	Stone Flat	3	0	0	0	8	2	—	0	0
28	2110	Four Mile	2	0	0	0	30	0	—	0	280
29	2103	Beaver Creek	4	0	1	1	40	0	—	0	0
30	2115	Mason Mountain									
31	2117	Mexican Field	1	0	0	0	8	0	—	0	0
32	2107	Cotant	0	0	0	0	10	0	Gabion	1	1000
33	2109	Double Mountain	0	0	0	0	16	0	—	0	0
34	2122	Sheep Creek	0	0	1	1	17	2	—	0	3490
35	2114	Mahala Creek	0	0	1	1	15	2			2831
36	2108	Eagle Rock 1	0	0	0	0	20	0	—	0	1800
37	2113	Lone Mountain	0	0	1	11	52		Windmill	1	0
38	2111	Fox Springs	1	0	2	0	10	1	—	0	3478

TABLE 9 (Continued)

RANGE IMPROVEMENTS FOR THE
ELKO RESOURCE AREA, BY ALLOTMENT

Map Reference Number	Allotment Number	Allotment Name	Spring Developments Number	Reservoirs Number	Wells Number	Pipelines Miles	Fences Miles	Cattleguard Number	Other Type	Other Number	Seedings Acres
39	2106	Coal Mine Basin	0	0	0	0	10	2	—	0	0
40	2118	North Fork Group	12	0	2	9	78	1	—	0	2306
41	2134	Dorsey	0	2	1	0	17	4	—	0	1938
42	2133	Long Field	0	0	1	0	8	0	—	0	0
43	2112	Halleck	0	0	1	0	22	0	—	0	0
44	2101	Adobe Hills	8	0	2	9	60	7	—	0	12533
45	2124	White Rock	0	0	0	4	15	2	—	0	4300
46	2129	Adobe	0	0	0	0	6	0	—	0	0
47	2104	Blue Basin	1	4	3	4	66	3	—	0	6800
48	2128	Dry Susie	4	0	0	1	41	0	—	0	0
49	2126	Carlin Canyon	0	0	0	0	6	0	—	0	0
50	1005	Carlin Field	0	0	0	0	26	1	—	0	0
51	1011	Hadley	3	2	0	4	40	5	—	0	0
52	1003	Taylors Carlin	0	0	0	0	0	0	—	0	0
53	1020	Marys Mountain	2	2	0	8	9	0	—	0	0
54	1027	T Lazy S	0	6	1	0	43	0	—	0	3650
55	1036	Argenta	0	0	1	0	4	0	—	0	0
56	1012	Horseshoe	1	1	2	4	28	0	—	0	0
57	1021	Palisade	2	1	0	0	30	2	—	0	0
58	5446	Pine Mountain	0	0	0	0	44	4	—	0	0
59	5430	Iron Blossom	6	0	0	0	13	2	—	0	1875
60	5456	Safford Canyon	5	0	0	1	25	5	—	0	2400
61	5459	Scotts Gulch	5	0	0	4	32	3	—	0	0
62	5423	Geyser	0	0	1	0	6	1	—	0	0
63	5467	Thomas Creek	2	0	0	5	14	3	—	0	0
64	5483	Thomas Creek FFR	0	0	0	1	0	0	—	0	0
65	5412	Devils Gate	0	2	0	1	10	2	—	0	0
66	5465	South Buckhorn	10	0	0	4	55	5			6400
67	5448	Potato Patch	1	0	0	2	11	0	—	0	1720
68	5445	Pine Creek	0	0	0	0	15	0	—	0	0
69	5439	Mineral Hill	9	0	0	8	26	3	—	0	1040
70	5473	Union Mountain	6	0	2	5	10	0	—	0	1800
71	5405	Bruffy	1	0	1	0	34	2	Trough	2	1920
72	5447	Pony Creek	4	0	0	2	25	4	—	0	0
73	5429	Indian Springs	3	0	0	2	22	2	—	0	4300
74	5414	Dixie Flats	2	0	1	3	24	11	—	0	3200
75	5417	Emmigrant Springs	0	0	0	0	19	4	—	0	640
76	5468	Tonka	2	0	0	0	9	5	—	0	0
77	5442	Old Eighty FFR	0	0	0	0	0	0	—	0	0
78	5422	Grindstone	2	1	0	0	3	3	—	0	730
79	5411	Cut Off	0	0	0	0	7	0	—	0	0

TABLE 9 (Continued)

RANGE IMPROVEMENTS FOR THE
ELKO RESOURCE AREA, BY ALLOTMENT

Map Reference Number	Allotment Number	Allotment Name	Spring Developments Number	Reservoirs Number	Wells Number	Pipelines Miles	Fences Miles	Cattleguard Number	Other Type	Other Number	Seedings Acres
80	5406	Bullion Road	0	1	1	0	7	2	—	0	1015
81	5466	Ten Mile	0	0	0	0	21	1	—	0	850
82	5420	Four Mile Canyon	1	5	1	0	12	1	—	0	260
83	5408	Burner Basin	0	0	1	0	0	0	—	0	0
84	5416	Elko Hills	1	2	2	1	8	0	—	0	800
85	5415	East Fork	0	0	2	0	8	0	—	0	960
86	2131	East Fork FFR	0	0	0	0	0	0	—	0	0
87	5407	Burger Creek	0	0	0	0	0	0	—	0	0
88	5463	Smiraldo	0	0	1	1	13	0	—	0	2820
89	5432	King Seeding	0	0	0	0	7	0	—	0	2128
90	5427	Horsefly	0	2	1	1	7	0	—	0	3875
91	5425	Heelfly	0	0	2	1	1	1	—	0	400
92	5460	Secret	0	0	0	0	6	0	—	0	800
93	5449	Rabbit Creek	0	0	0	0	4	0	—	0	1910
94	5431	Kennedy Seeding	0	0	0	0	4	1	St Tank	1	1588
95	5474	Walther	0	0	0	0	3	0	H20 Gap	1	360
96	5443	Palacio Seeding	0	0	1	0	8	2	—	0	980
97	5457	Sandhill North	0	1	0	0	8	0	—	0	2355
98	5458	Sandhill South	0	0	0	0	7	0	—	0	1000
99	5403	Bellinger	0	0	1	0	8	0	—	0	1195
100	5426	Hog Tommy	0	0	0	1	1	0	—	0	0
101	5404	Bottari Seeding	0	0	3	9	0	2	—	0	960
102	5441	Olgivie-Orbe	0	0	5	2	12	1	—	0	7810
103	5485	LDS FFR	0	0	0	0	0	0	—	0	0
104	5461	Shoshone	1	1	3	1	31	1	—	0	8230
105	5409	Chimney Creek	0	0	2	4	4	1	—	0	5060
106	5469	Twin Bridges	0	0	0	0	5	3	—	0	1750
107	5453	River	0	0	0	0	2	1	—	0	0
108	5433	LDS	0	0	0	0	1	1	—	0	0
109	5436	McMullen FFR	0	0	0	0	4	0	—	0	78
110	5464	South Fork	0	0	2	0	13	0	—	0	1280
111	5438	Crane Springs	1	0	1	0	7	0	—	0	0
112	5413	Dixie Creek	0	0	3	0	86	5	Gabion	2	11140
113	5462	Sleeman	1	1	1	0	9	0	—	0	0
114	5424	HAnsel	0	0	4	0	2	0	—	0	4428
115	5484	Wilson FFR	0	0	0	0	0	0	—	0	115
116	5475	Willow	0	0	0	0	3	0	—	0	1355
117	5477	Willow Creek Pockets	2	0	1	5	10	1	—	0	640
118	5480	Cottonwood FFR	0	0	0	0	9	0	—	0	1195
119	5437	Merkley-Zunino	0	0	0	0	1	2	—	0	1950
120	5401	Achurra	1	0	2	2	4	2	—	0	2000

TABLE 9 (Continued)

RANGE IMPROVEMENTS FOR THE
ELKO RESOURCE AREA, BY ALLOTMENT

Map Reference Number	Allotment Number	Allotment Name	Spring Developments Number	Reservoirs Number	Wells Number	Pipelines Miles	Fences Miles	Cattleguard Number	Type	Other Number	Seedings Acres
121	5402	Barnes Seeding	0	0	0	1	5	1	—	0	1660
122	5418	Barnes FFR	0	0	0	0	0	0	—	0	0
123	5478	Little Porter FFR	0	0	0	0	6	0	—	0	0
124	5486	Robinson Mtn FFR	0	0	0	0	0	0	—	0	0
125	5455	Robinson Mountain	0	0	1	0	13	0	—	0	3000
126	5435	Little Porter	0	0	0	0	3	0	—	0	590
127	5454	Robinson Creek	0	0	2	0	10	0	—	0	5250
128	5421	Frost Creek	3	0	3	2	14	1	—	0	6946
129	5479	Corta FFR	0	0	0	0	0	0	—	0	0
130	5410	Corral Canyon	2	0	4	4	12	1	—	0	2000
131	5482	Forest FFR	0	0	0	0	0	0	—	0	0000
132	5444	Pearl Creek	0	0	1	1	8	1	—	0	1485
133	5451	Rattlesnake Mtn	1	0	0	0	1	0	—	0	0
134	5434	Lindsay Creek	3	1	1	0	6	1	—	0	5300
135	5471	Twin Creek North	0	0	0	1	2	0	—	0	2500
136	5470	Twin Creek East	0	0	0	1	3	0	—	0	2645
137	5472	Twin Creek South	0	0	0	1	5	0	—	0	1250
138	5419	Merkley FFR	0	0	0	0	0	0	—	0	2000
139	5452	Red Rock	3	1	1	4	35	2	—	0	8870
140	5450	Browne	0	0	1	0	10	2	—	0	0
141	5440	Mitchell Creek	1	0	1	4	3	0	—	0	3040
		TOTAL	166	168	102	198					

TABLE 10

OPPORTUNITIES FOR CHANGES
IN MANAGEMENT PRACTICES

Allot. No.	Allotment Name	Adjustment in season of use or carrying capacity needed	Grazing system should be initiated or needs revision	Development of cost-effective range improvement possible	Changes in land-ownership should be considered	Significant inter-resource conflicts exist
1024	Owyhee	YES	YES	YES	NO	NO
1037	YP	NO	YES	YES	NO	NO
1019	Owyhee-Petan	YES	YES	YES	NO	NO
1015	Indian Creek FFR	NO	NO	NO	YES	NO
1039	VN Pocket Petan	YES	YES	YES	YES	NO
1033	VN Pocket Allied	NO	YES	YES	NO	NO
1006	Cornucopia	NO	YES	YES	NO	NO
1001	Andrae	YES	YES	YES	NO	NO
1035	Wilson Mountain	YES	YES	YES	NO	NO
1017	Lime Mountain	YES	YES	YES	YES	YES
1022	Mori	YES	NO	YES	YES	NO
1002	Bucket Flat	NO	NO	NO	YES	NO
1025	Rock Creek	YES	YES	YES	YES	NO
1038	Midas	NO	NO	NO	YES	YES
1018	Little Humboldt	NO	NO	YES	NO	NO
1032	Twenty-Five	YES	YES	YES	NO	NO
1031	Tuscarora	NO	YES	YES	YES	NO
1026	Six Mile	NO	NO	YES	NO	NO
1014	Taylor Canyon	YES	NO	YES	YES	NO
1008	Eagle Rock	YES	YES	YES	YES	NO
2125	Wildhorse Group	YES	YES	YES	NO	NO
2121	Rough Hills	YES	YES	NO	YES	NO
2130	Stone Flat FFR	NO	NO	NO	YES	NO
2102	Annie Creek	NO	NO	YES	NO	NO
2105	Bruneau River	YES	YES	YES	NO	NO
2119	Rattlesnake Canyon	YES	YES	YES	NO	NO
2123	Stone Flat	NO	NO	NO	NO	NO
2110	Four Mile	YES	YES	YES	NO	NO
2103	Beaver Creek	NO	NO	YES	YES	NO
2115	Mason Mountain	NO	NO	YES	NO	NO
2117	Mexican Field	YES	YES	NO	NO	YES
2107	Cotant	YES	YES	YES	NO	NO
2109	Double Mountain	YES	YES	YES	NO	NO
2122	Sheep Creek	NO	NO	YES	NO	YES
2114	Mahala Creek	NO	NO	NO	NO	NO
2108	Eagle Rock 1	YES	YES	YES	YES	NO
2113	Lone Mountain	YES	YES	YES	NO	NO
2111	Fox Springs	YES	YES	NO	YES	NO
2106	Coal Mine Basin	YES	YES	YES	NO	NO
2118	North Fork Group	YES	YES	YES	NO	NO

TABLE 10 (cont.)

Allot. No.	Allotment Name	Adjustment in season of use or carrying capacity needed	Grazing system should be initiated or needs revision	Development of cost-effective range improvement possible	Changes in land-ownership should be considered	Signifi inter-resourc conflic exist
2134	Dorsey	YES	YES	YES	YES	NO
2133	Long Field	NO	NO	NO	YES	NO
2112	Halleck	YES	YES	NO	YES	NO
2101	Adobe Hills	YES	YES	YES	NO	NO
2124	White Rock	YES	YES	NO	NO	NO
2129	Adobe	NO	NO	NO	YES	NO
2104	Blue Basin	NO	YES	YES	NO	NO
2128	Dry Susie	YES	YES	NO	YES	NO
2126	Carlin Canyon	NO	NO	NO	YES	NO
1005	Carlin Field	YES	YES	YES	NO	NO
1011	Hadley	YES	YES	YES	NO	NO
1003	Taylor's Carlin	NO	NO	NO	YES	NO
1020	Mary's Mountain	YES	YES	YES	YES	YES
1027	T Lazy S	YES	YES	YES	YES	NO
1036	Argenta	YES	YES	YES	NO	NO
1012	Horseshoe	YES	YES	YES	YES	NO
1021	Palisade	NO	NO	NO	YES	NO
5446	Pine Mountain	YES	YES	YES	NO	NO
5430	Iron Blossom	YES	YES	YES	NO	NO
5456	Safford Canyon	NO	NO	YES	NO	NO
5459	Scotts Gulch	YES	YES	YES	NO	NO
5423	Geyser	YES	YES	YES	YES	NO
5467	Thomas Creek	NO	NO	YES	NO	NO
5483	Thomas Creek FFR	NO	NO	NO	YES	NO
5412	Devils Gate	YES	YES	NO	YES	NO
5465	South Buckhorn	YES	YES	YES	YES	YES
5448	Potato Patch	NO	NO	YES	NO	NO
5445	Pine Creek	NO	NO	NO	NO	NO
5439	Mineral Hill	YES	NO	YES	NO	NO
5473	Union Mountain	YES	YES	NO	NO	YES
5405	Bruffy	YES	YES	YES	YES	NO
5447	Pony Creek	YES	YES	YES	NO	YES
5429	Indian Springs	YES	NO	YES	NO	NO
5414	Dixie Flats	NO	YES	NO	NO	YES
5417	Emmigrant Springs	YES	YES	YES	NO	NO
5408	Tonka	YES	YES	YES	NO	NO
5442	Old Eighty FFR	NO	NO	NO	YES	NO
5422	Grindstone Mountain	YES	YES	YES	NO	NO
5411	Cut-Off	NO	NO	NO	NO	NO
5406	Bullion Road	NO	NO	YES	YES	YES
5466	Ten Mile	YES	NO	YES	NO	NO
5420	Four MIle Canyon	NO	NO	NO	YES	YES
5408	Burner Basin	NO	NO	NO	YES	NO
5416	Elko Hills	NO	NO	YES	NO	NO
5415	East Fork	YES	YES	YES	NO	NO

TABLE 10 (cont.)

Allot. No.	Allotment Name	Adjustment in season of use or carrying capacity needed	Grazing system should be initiated or needs revision	Development of cost-effective range improvement possible	Changes in land-ownership should be considered	Significant inter-resource conflicts exist
2131	East Fork FFR	NO	NO	NO	YES	NO
5407	Burger Creek	NO	NO	NO	YES	NO
5463	Smiraldo	YES	YES	YES	YES	NO
5432	King Seeding	YES	YES	YES	YES	NO
5427	Horsefly	YES	YES	YES	YES	NO
5425	Heelfly	NO	NO	NO	YES	NO
5460	Secret	NO	NO	YES	YES	NO
5449	Rabbit Creek	NO	NO	YES	YES	NO
5431	Kennedy Seeding	YES	YES	YES	NO	NO
5474	Walther	NO	NO	NO	NO	NO
5443	Palacio Seeding	YES	YES	YES	NO	NO
5457	Sandhill North	NO	NO	NO	YES	YES
5458	Sandhill South	NO	NO	YES	YES	NO
5403	Bellinger	YES	YES	YES	NO	NO
5426	Hog Tommy	NO	NO	YES	NO	NO
5404	Bottari Seeding	YES	YES	YES	NO	NO
5441	Olgivie-Orbe	YES	YES	YES	NO	NO
5485	LDS FFR	NO	NO	NO	YES	NO
5461	Shoshone	YES	YES	YES	YES	NO
5409	Chimney Creek	YES	YES	YES	YES	NO
5469	Twin Bridges	YES	YES	YES	YES	NO
5453	River	NO	NO	YES	NO	NO
5433	LDS	NO	NO	YES	YES	NO
5436	McMullen FFR	NO	NO	NO	YES	NO
5464	South Fork	YES	YES	YES	YES	NO
5438	Crane Springs	YES	YES	YES	NO	YES
5413	Dixie Creek	YES	YES	YES	NO	YES
5462	Sleeman	NO	NO	YES	NO	YES
5424	Hansel	YES	YES	YES	NO	YES
5484	Wilson FFR	NO	NO	NO	YES	NO
5475	Willow	NO	NO	YES	NO	NO
5477	Willow Cr. Pockets	YES	YES	YES	NO	NO
5480	Cottonwood FFR	NO	NO	NO	YES	NO
5437	Merkley-Zunino	YES	YES	YES	YES	NO
5401	Achurra	YES	NO	YES	NO	NO
5402	Barnes Seeping	YES	YES	YES	NO	NO
5418	Barnes FFR	NO	NO	NO	YES	NO
5478	Little Porter FFR	NO	NO	NO	YES	NO
5486	Robinson Mountain FFR	NO	NO	NO	YES	NO
5455	Robinson Mountain	YES	YES	YES	NO	NO
5435	Little Porter	NO	NO	YES	NO	NO
5454	Robinson Creek	YES	YES	YES	NO	NO
5421	Frost Creek	NO	NO	NO	NO	NO
5479	Corta FFR	NO	NO	NO	YES	NO
5410	Corral Canyon	NO	NO	NO	NO	NO

TABLE 10 (cont.)

Allot. No.	Allotment Name	Adjustment in season of use or carrying capacity needed	Grazing system should be initiated or needs revision	Development of cost-effective range improvement possible	Changes in land-ownership should be considered	Significant inter-resource conflicts exist
5482	Forest FFR	NO	NO	NO	YES	NO
5444	Pearl Creek	YES	NO	YES	NO	NO
5451	Rattlesnake Mountain	NO	NO	NO	NO	NO
5434	Lindsay Creek	YES	YES	YES	NO	NO
5471	Twin Creek North	NO	YES	YES	NO	NO
5470	Twin Creek East	NO	NO	YES	NO	NO
5472	Twin Creek South	NO	NO	YES	NO	NO
5419	Merkley FFR	NO	NO	NO	YES	NO
5452	Red Rock	YES	YES	YES	NO	NO
5450	Browne	YES	YES	YES	NO	NO
5440	Mitchel Creek	YES	YES	YES	NO	NO

G. WILDLIFE HABITAT

1. Introduction

a. Terrestrial

In compliance with the principles of multiple use, the BLM is charged with the protection and enhancement of wildlife habitat. Competition for habitat components (forage, water and cover) exists between wildlife and other resource uses, e.g., mining, livestock, recreation, in some portions of the Elko Resource Area.

1) Planning Question

What will be the number of mule deer, elk, and antelope to be maintained in each grazing allotment?

Planning Criteria

Identify present and future levels of big game to be maintained within each allotment.

2) Planning Question

Where are the areas of crucial wildlife habitat and how will these be managed to maintain and enhance big game, upland game and non-game populations?

Planning Criteria

a) Identify crucial seasonal and crucial year round habitat for wildlife species. Priority areas include:

- wintering areas
- nesting and brood rearing areas
- fawning areas
- strutting grounds
- riparian habitat

b) Identify areas needing management to provide for the protection or development of food, water and cover which will allow for optimum wildlife populations.

b. Riparian

Aquatic and riparian habitats constitute less than one percent of the total land area administered within the Elko Resource Area. However, they are the most productive in terms of plant and wildlife diversity. They are also areas where competition exists between various resources, including wildlife, mining, livestock and recreation. As required by Executive Orders

11988 and 11990, management actions within floodplains and wetlands are to include measures to preserve, protect and, if necessary, restore their natural condition.

1) Planning Question

How will riparian resources be managed to maintain those areas in good or excellent condition or enhance those in poor to fair condition?

Planning Criteria

Aquatic/riparian habitat in poor or fair condition will be managed in a manner that will improve habitat to good condition. Habitat in good or excellent condition will be managed to maintain that condition. Management measures will occur on a priority basis as funding permits. The following criteria will be used to prioritize the order for protection:

a) areas providing habitat for threatened, endangered or sensitive species.
b) areas containing crucial wildlife or fisheries habitat.
c) waters presently containing productive fisheries.
d) waters where the maintenance of water quality is essential.
e) areas having the potential of becoming crucial wildlife habitat as the result of reintroduction of a wildlife species or the potential of becoming a productive fishery with the restoration of degraded habitat.

2. Current Management Situation

a. Present Conditions and Trends (Physical Profile)

1) Terrestrial

Current condition ratings have been assigned to the more significant seasonal wildlife habitat in the resource area. Habitat areas were assigned ratings of poor, fair, good, or excellent. These ratings are based on existing wildlife transect data, range site data, ecological condition data, observations recorded during field inventories and Nevada Department of Wildlife planning input. Each rated wildlife habitat area has the potential to attain at least a good (satisfactory) condition. Habitat areas rated either poor or fair were not considered satisfactory in terms of attaining wildlife habitat management goals.

A detailed description of wildlife habitat rating criteria and methodologies is available in the Elko Resource Area files. In brief, however, the general types of criteria

used in delineating satisfactory and unsatisfactory conditions can be classified into five basic types of measurements, all of which have different characteristics with different capabilities for wildlife habitat quantifications. These methods include frequency of occurrence, vertical cover, total plant cover/percent plant composition (by cover) biomass or production, and browse age and form class (see BLM Manual 6630).

a) Big Game - Mule Deer

Distribution

The overlays delineate deer distribution based on best available information. Summer range designation includes spring and fall periods and is represented by a blue color on the overlay. Winter range is encircled by orange and yearlong range by brown. Hatching denotes key areas, and arrows show migration routes. Form 615 in the Wildlife Habitat Appendix provides an estimate of population size by seasonal area.

Trapping and marking programs have been carried out in Management Area 6 to determine deer herd movement, the effects of hunting and the rate of population turnover.

Significant seasonal movement takes place within Management Area 6 and in some cases extends beyond the management area boundaries. The most important summer range within Management Area 6 and one of the most significant in the state is in Independence Mountains.

The Jarbidge Mountains and associated drainages constitute the heart of Management Area 7 summer range. There are six summer ranges identified as well as two areas of yearlong use and ten winter ranges. The pattern of movement between these various ranges has been documented through tagging studies in most cases. The following is a description of these areas by management unit.

NORTH FORK MANAGEMENT UNIT

Independence Range DS-1, Area 6

The Independence Mountains in northern Elko County is one of the most spectacular and valuable wildlife areas in the state. The area is steep and well-watered by numerous perennial springs and streams and is a main watershed for the Owyhee and Humboldt

Rivers. Vegetation consists primarily of sagebrush-grass and mountainbrush-grass communities. Aspen, willow and chokecherry stands are common in drainage bottoms, north-facing hillsides and snowpockets. Rangeland meadows are located in stringers along drainages and in upland areas of high watertables. Snowbush ceanothus patches and subalpine fir-limber pine stands are found in upper basins. Few other localities in Nevada contain such a productive mountain habitat. Deer summer at highest numbers on Forest Service administered land, but BLM administered land also has relatively high quality habitat.

Adobe Mountains DW-1, Management Area 7

This 110-square mile area was formerly a very important deer winter range. Fire and overuse by livestock has seriously reduced the carrying capacity of this area for deer. Much of the riparian habitat has been lost through erosion. Recent survey information indicates limited winter migration occurs from the Adobe Mountains to Elko Mountain during severe winters.

Double Mountain DW-2, Management Area 7

This area formerly wintered a much larger deer population than at present. The area has suffered from long-term forage over-utilization. Riparian habitat and many meadows are in very poor condition. Wildlife species adversely affected include deer and sage grouse. Major concentration areas are adjacent to the Keddy Ranch and on either side of the North Fork of the Humboldt River below the Haystack Ranch.

Jarbidge DS-1, Management Area 7

This is the largest (1,034 square miles) and most important of the deer summer ranges in Area 7. It includes all of the Jarbidge Mountains,

surrounding foothills and associated drainages. Habitat types range from conifer forests and mountain brush communities to cold desert shrub and riparian. Deer from this area winter primarily on eight separate winter ranges.

Range conditions can generally be classed as fair to good. The present plant communities are moving away from the preferred mountain brush types to grasses. This trend is most obvious on the north end of the Jarbidge Mountains. The south end of this range is suffering from the long-term effects of over-grazing in some areas.

Spring and meadow areas are heavily used and trampled during the summer use period. Headcutting of meadows is occurring with a resulting invasion of sagebrush.

No key summering areas have been delineated on the map. It is felt that all the wetter areas with an associated mountain brush type can be considered key range.

Mountain City-Mahoganies DW-1, Area 6

This high quality area contains two important deer winter ranges and also receives relatively high use during spring-summer-fall. Steep, rocky, south-facing slopes along the East Fork of the Owyhee River, Meadow Creek and the lower Bruneau River are especially critical locations during winters with heavy snowfall.

Buckhorn Management Unit

Mule deer use on BLM land is restricted to the Ruby Bench and major riparian zones. Summer and fall use in terms of numbers of deer is consistent from year to year. Variation in the number of deer utilizing winter and spring ranges on BLM land are a result of migrational movements of the Ruby herd. Reasonable numbers and AUM demand are provided on Wildlife Habitat Appendix Form 615 by season of use.

Summer use areas on BLM lands are restricted to riparian zones associated with perennial streams from Lindsay Creek to Rattlesnake Creek, the Rabbit Creek and Lamoille Creek drainages, and the Humboldt River system. While most of the large riparian complexes, such as Lamoille Creek and the Humboldt River are privately owned, elevational movements of deer from these areas during the winter bring them in contact with public lands.

Winter use areas associated with the Ruby Bench are limited to bitterbrush/sagebrush communities on south-facing slopes. The majority of this winter use occurs from Lindsay Creek to Corral Creek. Extent and duration of use is dictated by migrational movements associated with climatic conditions. BLM lands in the Elko RA provide minimal winter range for Ruby deer.

The most variable of all seasonal use patterns in relation to BLM lands in the Elko RA is spring use. In years when prolonged cold and heavy mountain snows retard green-up, significant deer spring use can occur at lower elevations from Pearl Creek to Rattlesnake Creek. In milder years, spring use on BLM lands is minimal.

Pinyon-Sulphur Spring Range DS-2, Area 6

This range is located south of Carlin and is a lower deer population area. High quality habitat is far less extensive than the Independence Range but is important enough by arid Nevada standards to be considered key habitat.

Humboldt-Union DY-1, Area 6

This area includes the Humboldt River west of Elko and low elevational land surrounding the Pinyon and Sulphur Spring Ranges. Deer utilize the area yearlong and additional deer move into the area during winter. Key areas have been identified as summer range along the Humboldt River and winter habitat at Cedar Ridge and Union Pass.

Carlin Canyon-Adobe Range DW-4, Area 6

This winter range is on the south side of the Adobe Range from Maggie Creek and Carlin Canyon east to Elko. Deer migrate fairly long distances from the Independence Range to winter in this area, although some deer probably also come from the adjacent river bottom.

Butte-Antelope Creek-Roosters Comb-Sheep Creek-Dunphy-Palisade DW-5, Area 6

This large area encompasses six winter ranges. Deer migrate into the area from the Tuscarora Mountains, Snowstorm and Independence summer ranges. Key areas include the Butte Hills south of Willow Creek Reservoir, hills between Mud Springs and Antelope Creek, Roosters Comb Hills north of Izzenhood Ranch, the east side of the Sheep Creek Range, low hills and mountain slopes east of Dunphy, and hills north of the river near Palisade. Roosters Comb, Sheep Creek Range, Dunphy and parts of Palisade have lost much of their browse component but are still important winter ranges because of their relatively low elevation and snow-free characteristics.

Cortez Range DS-1, Management Area 14

The Cortez range is primarily a deer summer range extending from the Humboldt River through Buckhorn to Mount Tenabo. An estimated 74 square miles of summer range is located in this unit.

Recent aerial deer surveys have shown considerable use by deer in the upper basins, primarily along the west side of the range. Some deer use occurs in the big sagebrush basins along the east side. The majority of the deer were observed from Frenchie Creek south to Mount Tenabo along the west side, and from Horse Creek north to Little Pole Creek along the east side.

Cortez Range DW-1, Management Area 14

During mild winters, deer probably stay in the Cortez Range. Some deer migration from Area 6, Tuscarora and Buckhorn Units occurs into the Cortez Range.

Severe winters will find these deer moving further south to the Simpson Park Mountains and probably as far south as Nye County.

Sulphur Spring Range DW-2, Management Area 14

Deer distribution depends on the migration patterns from Area 6 and from parts of Area 14. For the most part, the Sulphur Spring Range is classed as a winter and migration area. Very little (21 square miles) summer range exists in the area. Most deer concentrations are found from Table Mountain and Telegraph Canyon north to Union Pass.

Reasonable numbers are presented in Wildlife Habitat Appendix (Form 615).

Tuscarora Management Unit

Tuscaroras DS-3, Area 6

This area includes the North and South Tuscarora Ranges and is the second most important summer range in Area 6. Vegetation is similar to the Independence Range but not as extensive. This area is also one of the more important deer habitats in Nevada.

Snowstorm DS-4, Area 6

This relatively small but significant range is located near Midas. Vegetation is chiefly sagebrush-grass, but a significant amount of aspen is present along with some snowbush ceanothus at upper elevations. This rocky area is comparatively undeveloped in regard to roads and is classified as key deer range. The

watershed is the headwaters of the South Fork of the Little Humboldt River.

Owyhee-Midas-Tuscarora-Boulder DY-2, Area 6

This large area of yearlong deer use includes lower elevations along the South Fork of the Owyhee River, Tuscarora Mountains, Snowstorm Mountains and Boulder Valley. Deer use increases during winter and concentration areas are delineated in the Tuscarora Mountains and near Midas.

White Rock-South Fork DW-2, Area 6

This winter area extends from the Owyhee Indian Reservation south into the North Tuscarora hillsides on the Petan Ranch, Mt. Wilson and the South Fork of the Owyhee River area (in the Deep Creek and North Tuscarora ranges) and are especially critical locations during winters with heavy snowfall. No condition rating is available.

Taylor Canyon-Jack Creek DW-3, Area 6

This higher elevation winter area on the west side of the Independence Range extends from Taylor Canyon to Jack Creek. Deer migrate to the area from north, east and west sides of the mountain range. This is the most important deer winter range in Area 6. The summer use is on Forest Service-administered land.

Starr Ridge DW-6, Area 6

Little is known about this Owyhee Desert site, but approximately 25 deer were observed on a February 4, 1980 fixed-wing antelope flight.

Population Estimates

The following population information is presented by Nevada Department of Wildlife Management Area. Also refer to Tables 1, 2, 3 and 4 in Wildlife Habitat Appendix.

Management Area 6

Information is not available to predict deer densities for different range conditions. In Management Area 6, the population from 1952 to 1972 was two to three times larger than the current level. The long-term (25-year) trend for habitat and population is down considerably, area-wide.

The 1976-80 average fawn/doe ratios for units within Area 6 are as follows:

UNIT	FAWN/DOE
061	80/100
062	94/100
067	81/100

(data incomplete for other units)

In 1982, Area 6 satisfied approximately one-third of the resident tag demand and 17 percent of the nonresident tag demand. Key area designation is based on surveys and judgment.

Management Area 7

Information is not available to predict densities for different range conditions.

Current population estimates are not available by management unit or seasonal range but are presented in Wildlife Habitat Appendix on a management area basis. The Management Area 7 population trend is downward. Since the recent population peak in 1978, the entire Management Area 7 deer population has experienced a steady decline in numbers. The only unit in Area 7 with an appreciable amount of its area within the Elko Resource Area is Unit 073. The same population trends experienced throughout Area 7 have also occurred within this unit.

The 1976-82 average fawn/doe ratio for Unit 073 was 76/100. For an area-wide basis, fawn loss for this period averaged 32 percent. In 1982, Area 7

satisfied approximately two-thirds of the demand for resident tags and 20 percent of the demand for nonresidents.

Key area designation is based on surveys and judgment.

Management Area 14

In Management Area 14, Units 141 and 142 are located in the Elko Resource Area. Unit 141 is almost entirely within the resource area, but only a small portion of Unit 142 is contained in the area.

In Unit 141, recent population estimates show a population of about 1,270 deer. In Unit 142, the current population estimate is 700. The actual numbers of deer within that portion of Unit 142 in the resource area is largely influenced by seasonal movements from Area 6.

b) Big Game - Antelope - Elko County

Tuscarora Management Unit

Distribution

Owyhee Desert - AY-1

The Owyhee Desert antelope range extends from the Snowstorm Range north to the Idaho border. The east boundary lies along Four Mile Creek and the South Fork of the Owyhee River. Generally, the summer herds stay between Button Lake and Chimney Creek Reservoir. Most frequently the majority of the antelope are found in the dry lake areas just south of the Monument Hills (which is key range). The winter populations use the same areas but tend to winter more north of Button Lake during heavy snowfall winters.

YP Desert - AY-2

The YP Desert antelope habitat is bounded by the South Fork of the Owyhee River on the west and south and

by the Idaho border and Duck Valley Indian Reservation on the north and east. The antelope in this area probably also move north of the Idaho border (particularly in the summer). Water is fairly evenly dispersed throughout the area. Most of the water is in developments built by the Petan Ranch.

The antelope are found most often in the Josephine Reservoir area. They are observed from early fall through early spring.

NORTH FORK MANAGEMENT UNIT

Distribution

Kittridge - Sherman Creek

Observations of antelope in the vicinity of these areas during the past few years indicates an influx during winter and spring from antelope ranges to the north and east. Observations usually occur in winter and spring.

Other

Other observations have been made in Boulder Valley, Willow Creek Reservoir drainages, Independence Valley, Taylor Summit to Foremen Creek, Wildhorse Reservoir area and West Fork of Beaver Creek drainage.

Population Estimates and Reasonable Numbers

In computing reasonable numbers, aerial survey data was reviewed and expanded to obtain a number suitable for each area in consideration of range potential. The expansion used for the Owyhee Desert was 100 percent. With an observed population of approximately 200 animals, the reasonable number population would be 400 animals. The expansion figure for the YP Desert was 500 percent. With an observed population of about 20 animals, the reasonable number population would be 100. See Wildlife Habitat Appendix, Form 615, for AUM requirements. The conversion factor used for antelope AUMs is 5:1.

Information is not available to predict potential densities for antelope yearlong range in good, fair, and poor condition. However, populations were two to three times larger from 1952-1972. The current summer population estimate for Management Area 6C, including Button Lake, is 150-250. The 25-year population trend for Management Area 6C is possibly stable. The Management Area 6C average kid/doe ratio from 1976-1980 was 33/100.

c. Big Game - Antelope - Eureka County - Buckhorn Management Unit

Distribution

A portion of the Area 15 antelope herds occur on Elko District lands while on summer range. These herds are located in the Cortez Mountains, the north end of Crescent Valley and in portions of Pine Valley.

Cortez - AY-1

Antelope were released to the Pine Valley area in the early 1950s. At one time they ranged from the north end to the south end of Pine Valley around Horse Creek.

According to the local people, the antelope flourished at first and reached a peak in the late 1950s when populations were estimated as high as 200 in Pine Valley alone. Since then, they have declined to a very low point. Recent sightings have been in the Buckhorn area and also in Crescent Valley north of Frenchie Creek. The Buckhorn animals normally winter off Elko District in the north end of the Simpson Park Range.

Buckhorn - AS-1

This is primarily a summering area for antelope which inhabit the south end of Pine Valley. These animals move back and forth from Buckhorn to the north end of the Simpson Park Mountains.

A grazing system to increase grasses and forbs should be implemented. Sagebrush should not be removed, as this is also an important sage grouse area.

Crescent Valley - AY-1

This area in the vicinity of Frenchie Creek north to the Dry Hills and Iron Blossom Mountain is yearlong antelope range. These animals may move north across Interstate 80 towards Dunphy and the south end of the Tuscarora Mountains. There is a possibility that these animals would intermingle with the Buckhorn herd.

A grazing system to increase grasses and forbs would be beneficial to this herd.

NDOW Management Unit 10

Antelope presently inhabit the Dennis Flat area of the Starr Valley Bench. At present, this herd numbers 10-15 animals. Antelope sightings in Huntington Valley date back to 1953. No resident population currently exists within the Elko County portion of the valley. Relatively recent changes in the vegetative composition of upland benches in Huntington, Lamoille, and Starr Valleys due to vegetative manipulation practices have increased the suitability of much of the area for antelope. Future plans may promote an augmentation of the Dennis Flat herd as well as the reestablishment of antelope in Huntington and Lamoille Valleys.

Reasonable Numbers and Population Estimates

Reasonable number estimates for the Buckhorn herds are based on a .474 antelope per square mile figure. This is the average density figure for pronghorn in Nevada from the Nevada Department of Wildlife's Pronghorn Antelope Species Management Plan (Tsukamoto, 1983). This figure is based on the estimated resident summer population and the delineation of approximately 17,710 square miles of habitat in Nevada.

Reasonable numbers for the Buckhorn herd are 95 animals, based on approximately 200 square miles of currently occupied habitat, and 142 animals, based on 300 square miles of potential habitat.

d. Upland Game - Sage Grouse

Distribution

Sage grouse occur throughout the Elko Resource Area. Sage grouse distribution is delineated on overlays for the Elko Resource Area and includes strutting grounds, brooding areas, and known winter areas. Known strutting grounds are also listed in the District files.

Population Estimates

Population estimates are based on the assumption that harvest is approximately 15 percent of the total population. The last five-year average harvest for Elko is 6,867, Eureka 1,527 and Lander 1,064. This results in an estimated population of 45,780 for Elko, 10,180 for Eureka, and 7,093 for Lander. It is estimated that 60 percent of the Elko population is in the Resource Area, 10 percent for Eureka, and 5% for Lander. Based on these very broad assumptions the total population for the Elko Resource Area would be around 29,000 sage grouse. It should be noted that in good production years this number could more than double and in poor production years it could go below the estimate.

The delineation of high, medium, and low density areas for sage grouse cannot accurately be predicted. Some broad assumptions can be made concerning relative densities. Densities would normally be higher in areas where there are greater numbers of strutting grounds and in areas of relatively high hunter harvest.

e. Upland Game - Blue Grouse

Distribution

Blue grouse occur from Merritt Mountain south through the Independence Range to Wheeler Mountain just north of Taylor Canyon. They also occur in the Bullion area in the Pinyon Range and on Lone Mountain.

Population Estimates

Blue grouse occurrence throughout the Elko Resource Area is extremely limited. The only documented areas where yearlong populations are maintained is in the Bullion and Lone Mountain areas, and numbers here are marginal at best.

The known populations and available habitat are

primarily located on U.S. Forest Service lands. Some limited seasonal use may occur on the resource area when immediately adjacent to occupied habitat on U.S. Forest Service lands.

f. Upland Game - Chukar

Distribution

The majority of the chukar occur on public lands. The most important areas are in the Tuscarora, Snowstorm and Sheep Creek Mountains in the Tuscarora Management Unit (see chukar distribution overlay).

The most important areas in the Buckhorn Management Unit are the Cortez and Pinyon Ranges.

The most important area in the North Fork Management Unit is the Beaver Creek-Bruneau River area.

Population Estimates

The chukar distribution overlay outlines the present occupied habitat. These areas are further broken down into high, medium and low density areas.

High Density - 1 = 30-50 birds per square mile
Medium Density - 2 = 13-30 birds per square mile
Low Density - 3 = 1-15 birds per square mile

The average point of each density was used in computing population estimates for each management unit.

Tuscarora Management Unit

High Density = 211 sq. miles = 8,400 chukar
Med. Density = 728 sq. miles = 16,400 chukar
Low Density = 127 sq. miles = 900 chukar

TOTAL = 25,700 chukar

North Fork Management Unit

High Density = 209 sq. miles = 8,400 chukar
Med. Density = 987 sq. miles = 21,700 chukar
Low Density = 108 sq. miles = 800 chukar

TOTAL = 30,900 chukar

Buckhorn Management Unit

High Density = 275 sq. miles = 11,000 chukar
Med. Density = 94 sq. miles = 2,100 chukar
Low Density = 211 sq. miles = 1,500 chukar

TOTAL = 14,600 chukar

In good production years these estimates could more than double, or conversely, in poor production years drop to less than half.

The chukar density ratings are based on estimates of habitat quality. The high density areas contain high quality habitat which serves as a nucleus for populations even in years when population levels are low. The median density areas are rated as such due to a function of habitat quality. These areas are subject to more severe population fluctuations but may reach high densities in peak population years. Low density areas contain marginal habitat and include range that may be occupied by overflow from high or medium density areas in peak population years. Maps depicting these density ratings are shown in the Nevada Department of Wildlife's Chukar Partridge Species Management Plan (Molini, 1976). It should be noted that good or high quality chukar habitat may not be rated as good quality for other upland game species.

g. Upland Game - Hungarian Partridge

Distribution

The Hungarian partridge is widely distributed throughout the Elko Resource Area (see distribution overlays).

Population Estimates

Populations have been erratic since the early 1950s when observation records were started. There are approximately 460 square miles of range, as determined from plotting all sight records.

A population high was experienced in the early 1970s, when in many areas Hungarians comprised more than 50 percent of the bag (Hungarians are included in the aggregate for limits on

chukar). Since that time population levels have declined.

h. Upland Game - Quail (Valley and Mountain)

Distribution

Distribution overlays document known species occurrence.

Population Estimates

Populations are marginal, and the severe northeastern Nevada winters often nearly eliminate small local populations. Populations have been periodically reestablished in several instances by introducing wild birds from the Reno area. Quail observations are scattered throughout the area, but the majority of the sightings are in the Bruneau River-Meadow Creek, the South Fork Little Humboldt and Rock Creek drainages. These areas, particularly on the west side, have milder temperatures with less persistent snow cover.

i. Upland Game - Pheasant

Distribution

The pheasant distribution overlay map outlines the occupied habitat. At the present time, all of the occupied habitat lies within private land along the Humboldt River. The Bureau of Reclamation administers several thousand acres of potential habitat along the river, but at the present time, the area is so degraded by overgrazing, that pheasant populations are at very low levels.

Population Estimates

The resource area contains roughly 40 square miles of occupied habitat. The area cannot be considered good pheasant habitat when comparing it to agricultural areas. With an estimated 40 birds per square mile, the total population would be around 1,600 birds.

The pheasant population has remained fairly static for the past several years.

j. Upland Game - Dove

Dove are found throughout the area from mid-spring until fall. Dove density varies from year to year but would generally be considered medium to low.

k. Upland Game - Cottontail, Pygmy Rabbits and Whitetailed Hare

Distribution

Cottontail rabbits are found throughout all three management units at all elevations at all seasons of the year. Pygmy rabbits are not as widely distributed and are confined to dense patches of big sagebrush at the lower elevations.

The whitetailed hare occurs in the Sunflower Flat and Independence Valley areas, as well as in the Saint John area.

Population Estimates

Rabbit and hare populations are cyclic, fluctuating from one extreme to another.

l. Waterfowl

Distribution

See overlay and tables. Duck and geese populations concentrate in Boyd, Zunino and Wilson Reservoirs in the Elko Resource Area.

Population Estimates

Waterfowl populations are monitored while conducting breeding pair surveys in May and during the migration period from September through January.

Local waterfowl populations are assessed during the breeding pair surveys. An average of 2,329 duck pairs were found over the last four-year period. Dominant breeding species are cinnamon teal, gadwall, redhead, canvasback and mallard. Goose pairs averaged 371 pairs during three of the past four years. No survey was conducted in 1981. The goose pair data suggests that the local population continues to build in size. A total of 392 pairs were found in 1983, compared to 255 pairs in 1978.

Peak duck populations during the migration period occur in late September and early October. During this time frame in 1982, 15,265 ducks were found on surveys within the Elko Resource Area. Peak populations can be expected when Canadian duck production is good and water levels are high within the resource area. If water levels are low, fewer ducks will stay in the area, regardless of Canadian production.

Peak Canada goose numbers usually occur in late November or December. Recent migrating populations have reached as high as 3,000 birds within the District.

m. Non-game

Raptor Distribution

Known golden eagle, prairie falcon, goshawk, ferruginous hawk, and Swainson's hawk nesting territories are shown in Figures 1, 2, 3 and 4 presented in Wildlife Habitat Appendix. The Nevada Department of Wildlife updates its raptor nesting distribution files as new information is obtained.

Due to the sensitivity of nesting raptors to human disturbance, it is requested that information regarding nest site locations be used only for legitimate land management purposes and not be available for public dissemination.

Raptor Nesting Habitat

Ferruginous Hawk

The resource area has not been specifically surveyed by NDOW to document ferruginous hawk nesting distribution. Ferruginous hawks do nest within the resource area, however nesting populations are not considered to be high.

Nesting is usually limited to the pinyon-juniper/desert shrub interface along valley slopes. Within the ecotonal belt, isolated juniper trees are selected as nest sites.

Swainson's Hawk

The majority of recent Swainson's hawk nesting activity has been associated with extensive meadows and agricultural valleys, though historically more xeric upland habitats were also utilized. Few active nest sites have been located in the state. Most of those located in northeastern Nevada are within the resource area. It is generally accepted that Swainson's hawks have declined drastically over the past century and are currently at extremely low population levels. The reason for this decline has yet to be identified.

Cliff Nesting Raptors

Golden eagles and prairie falcons nest throughout the resource area. Both species nest on ledges, recesses, or in cavities on rock cliffs, outcrops, or rims, usually adjacent to valleys. Golden eagles, though usually associated with cliff sites in Nevada, will also nest in trees. Some of the highest nesting densities of prairie falcons and golden eagles in the state are found in the canyon lands at Palisades and in canyons along the South Fork of the Owyhee River and the North and South Forks of the Humboldt River.

Wintering Raptors

With the exception of Swainson's and ferruginous hawks, all raptors indigenous to the resource area are present through the winter, though portions of some populations will migrate from the area.

Large numbers of rough-legged hawks migrate to and winter along valley slopes and floors. Some bald eagles also winter in the resource area, primarily at Wilson Reservoir, the Petan Ranch, and Lamoille Valley.

Most of the resource area's wintering raptors (especially golden eagles and rough-legged hawks) are dependent upon jackrabbits as a food source. During winter, jackrabbits often congregate in large numbers in areas that provide relief from harsh weather conditions. These concentration areas generally dictate the distribution of wintering golden eagles and rough-legged hawks.

Other Wildlife

Non-game birds and mammals occur in all habitat types within the Elko Resource Area. Habitat diversity and species dependency is a direct result of unique features such as springs, rock outcrops, aspen woodlands, riparian vegetation or wet and upland meadows.

2. RIPARIAN

a) Terrestrial Riparian

Within the Elko RA, there are approximately 2,300 springs, seeps, and wet meadows. District information indicates that these support an estimated 4,600 acres of associated riparian habitat. Those which have surface water are generally impacted much the same as streamside riparian (i.e., livestock congregate on these areas for the feed and water). As a result, these areas are generally in less than good condition and probably produce less than their potential in riparian vegetation and water outflow. In addition, riparian habitat in less than good condition benefits fewer wildlife species than that in good or better condition. The extent of degradation depends on a variety of factors such as livestock access, gradiant and location.

Riparian areas that are not associated with surface water are generally in better condition than those which have surface water. This is probably due to the fact that without surface water they attract fewer livestock. However, many of these areas are still degraded if access, gradient and other factors favor heavy utilization by livestock.

Data collected for the Wells RA (1979-1981) showed that an average of about 75 percent of the terrestrial riparian habitat was in less than good condition (Elko District Files). As a general guide, and since habitat conditions are quite similar, an estimated 3,450 acres within the Elko RA are in less than good condition (extrapolated from Wells RA data).

b. Aquatic Habitat and Fish Populations

Aquatic inventories were conducted from 1977 to 1980 on all streams known, or having the potential, to support fish populations within the Elko Resource Area. Both public and private stream segments were inventoried, per BLM manual, to provide overall information about each stream and its watershed.

Stream inventory results indicate that, of the 72 streams inventoried, 585 miles total, 64.2 percent are privately owned and 35.8 percent are publicly (BLM) administered. Habitat condition rates poor on 65.8 percent and fair on 27.4 percent of these streams. Only 6.8 percent are in good or excellent condition.

Fish Populations

Trout populations are present in 37 of the 72 streams inventoried (Table G-1). Only rough or non-game fish are located in 13 streams, while 22 streams are devoid of fish altogether. Game fish occupy approximately 211 of the 585 miles of stream, of which 60 miles are in publicly (BLM) administered segments.

TABLE G-1
FISH SPECIES PRESENT IN INVENTORIED STREAMS

Fish Species	No. Streams
Trout	37
Other non-game fishes	13
No fish present	22

Threatened, Endangered, and Sensitive Species - Lahontan cutthroat trout (Salmo clarki henshawi), listed as threatened on the Federal list, occupy 16 streams (Table G-2). In 13 of these streams Lahontan cutthroat trout was the only salmonid species present.

TABLE G-2
TROUT SPECIES OCCURRENCE

Species	No. Streams
Rainbow only	11
Lahontan cutthroat only	13
Rainbow and brown	1
Rainbow and brook	4
Rainbow and Lahontan cutthroat	1
Redband only	2
Rainbow and whitefish	1
Lahontan cutthroat and brook	1
Brook only	2
Lahontan cutthroat and brown	1

A total of 81.5 miles of stream, of which 16.6 miles is publicly (BLM) administered, are inhabited by cutthroat trout. This (81.5 miles) represents 60.0 percent of the total Lahontan cutthroat habitat within the Elko District.

Nine of the 16 streams occupied by this threatened species are in poor habitat condition and seven are rated fair; only one is in good condition. Individual inventory reports, the "Status Report on Lahontan Cutthroat Trout within the Elko District, BLM, December, 1980" and the "Lahontan Cutthroat

Trout Fishery Management Plan for the Humboldt River Drainage Basin" (prepared by Pat Coffin of NDOW), provide much more detailed information on the cutthroat.

Redband trout, Salmo newberryi, (as described by Behnke, 1979) is considered a sensitive species by the Nevada Department of Wildlife, with known populations existing in only three Nevada streams. Two streams, Chino Creek and Winters Creek are located in the Elko RA, with the third stream, Trout Creek, located in the Wells RA. The Nevada redband trout is unique in that it is able to tolerate water temperatures up to 85 degrees F.

Trout Species, Other Than T&E - Rainbow trout (Salmo gairdneri) occupy 18 streams, including seven streams in combination with other trout species. Brown trout (Salmo trutta) are present in two streams in combination with other trout species. Brook trout (Salvelinus fontinalis) are in seven streams, including five streams in combination with other trout species.

Aquatic Habitat

Table 5 in Wildlife Habitat Appendix includes the habitat condition rating for each stream inventoried. The overall rating is based upon a percentage of optimum condition, optimum being the theoretically perfect condition, or 100 percent. The condition rating is classified as follows: excellent, 70 percent and higher; good, 60 to 69 percent; fair, 50 to 59 percent; and poor, 49 percent and lower.

The overall habitat condition (percentage of optimum) is determined by averaging the values for five "Priority A" fish limiting factors. Each of these factors was rated poor or fair on at least some of the 72 streams inventoried: pool-riffle ratio on 28 streams, pool quality on 72, stream bottom percent desirable materials on 39, bank vegetation cover on 48, and bank stability on 17.

"Priority B" fish limiting factors are not averaged into the overall rating but are significant in limiting fish populations. The stream widths and depths, for example, were found to have a mean ratio of 33:1; this indicates a wide and shallow stream channel with limited space in which fish can live. The amount of stream surface shade averages only nine percent. The percentage of stream bottom with sedimentation (sand and silt) averages 31 percent (Elko District files).

Habitat Conflicts

The analysis of limiting factors in each stream inventory report concludes that, in most cases, livestock grazing is primarily responsible for producing and maintaining the deteriorated habitat condition. These conclusions are substantiated by results of studies on the West Fork of Deer Creek and Tabor Creek in the Wells RA and Gance Creek in the Elko RA. Mining and road construction activities have also caused considerable localized impacts.

Livestock Grazing

The initial impacts of livestock grazing on a stream are first noted on its respective watershed. Source springs are often severely trampled, which can reduce flows and increase water temperatures. Heavy grazing of vegetation and trampling of wet meadows and upper stream channels may lower water tables in the watershed. Trampling and the reduction of vegetation and litter in other parts of the watershed can result in increased water runoff. As a result, the watershed often has a much reduced water storage capacity. This produces higher peak stream flows in spring and less flow during summer. Higher flows increase flood damage, and the low summer flows reduce living space for fish and increase water temperatures. In some cases, streams once having yearlong flows now dry up during the dry summer months. This condition not only eliminates aquatic wildlife but also a highly productive area of livestock forage.

The impacts on streams from livestock grazing are often most severe on the stream channels themselves. Because livestock tend to spend a large portion of their time along streams, a much higher percentage of riparian vegetation is consumed than vegetation in surrounding areas. In addition, the trampling effect on vegetation and streambanks is pronounced.

As a result, much of the riparian vegetation may be eliminated, and streambanks become unstable. The unstable banks break down, resulting in streams which are wide and shallow, with little living space or hiding cover for trout.

Sand and silt from erosion will cover the stream bottom, decreasing fish food production and smothering fish eggs in spawning areas. The

larger water surface areas without shade often result in higher water temperatures in summer, which are too hot for trout survival. As with watershed impacts, water tables may be lowered, resulting in streams flowing shorter distances in the summer or drying up earlier. The overall result of these impacts from livestock grazing on the stream channel and its watershed is that fish, particularly trout, are often reduced in numbers and size or even eliminated from some portions of streams.

As described, the effects livestock have on aquatic/riparian habitat are many and varied. Current livestock management practices, such as grazing systems, (rest rotation and deferred), salting and watering away from crucial areas, all help in slowing the rate of habitat degradation. However, a variety of studies, including several which are on-going within the Elko District, have indicated that these methods alone are not successful in improving habitat condition, particularly aquatic habitat, at current vegetative utilization levels.

At riparian vegetative utilization levels of 25 to 40 percent, some success has been achieved, but this leaves the uplands away from the riparian area virtually untouched and underutilized. Other methods such as complete rest within an allotment or pasture also serves to improve aquatic/riparian habitat, but in many cases, this practice needlessly rests large areas of upland range.

Mining Activities

Mining has a high potential for adverse impacts on stream habitat but influenced only a few streams during the inventory. The primary impacts cited in the inventory reports were sediment contribution and riparian area disturbance caused by improperly constructed or poorly maintained mining roads. With the increase in mining activity in Elko County, the likelihood of impacts associated with chemical contamination and land surface disturbance increase.

Road Placement and Construction

Stream bottom areas are often favored for routing roads, and most roads cross a stream at some point. The impacts are the same as those stated for roads in the mining section above.

Inventory reports include examples and analyses of adverse effects from roads other than those in mining areas.

Other Activities

Water diversions for agriculture and the associated channelization of streams are detrimental to fisheries habitat on many of the streams inventoried. Diversions often remove water from the main stream channel, which reduce fish populations downstream from that point. Diversion structures are often barriers to fish migrations also. Channelization associated with many of these diversions destroys fisheries habitat and riparian vegetation. Although much of this activity is on private land, some occurs on BLM-administered land.

One additional important habitat conflict is the ownership pattern on stream channels. Over half of the stream miles inventoried are privately owned. Adverse impacts on private stream segments usually influence fisheries habitat conditions on BLM-administered segments and vice versa. Rehabilitation of public segments of stream habitat may not be fully possible without improvements on other segments.

c. Mandates and Authorities for Use and Protection

The Bald Eagle Protection Act of 1940 prohibits the taking of golden and bald eagles, including harassment, harm, wounding, killing, possessing, selling and pursuit of any kind.

The Sikes Act of 1960 requires that cooperative agreements between Federal and state agencies provide adequate protection for fish and wildlife officially classified as threatened or endangered, pursuant to Section 4 of the Endangered Species Act (ESA) of 1973, or considered to be threatened, rare, or endangered by the state agency. The following items are provided for by the Sikes Act:

Title II authorizes the following key elements for BLM wildlife program management:

1) Cooperative agreements and close working relationships with state wildlife agencies;

2) Preparation and implementation of joint, BLM-state wildlife agency habitat management plans (HMPs);

3) Integration of the BLM's wildlife program with the Bureau's planning system, environmental assessment, and public input and review process;

4) Implementation of on-the-ground wildlife habitat improvement, maintenance, and protection programs;

5) Protection and management of both Federal and state-listed threatened and endangered species; and

6) Establishment of a potential hunting and fishing stamp program for state wildlife agencies to use -- if and when they deem fit.

The Land and Water Conservation Act of 1965 provides for acquisition of lands by states and Federal agencies for various Federal purposes, one of which is protection of endangered and threatened species habitat.

The Fish and Wildlife Coordination Act of 1958 directs that wildlife conservation be given equal consideration and be coordinated with other features of water resource development programs.

Since management of wildlife habitat and livestock grazing are closely related, many of the mandates and authorities for wildlife habitat requirements also apply to livestock grazing (as well as other resources). The following legal authorities pertain to wildlife resources:

- The Wild Free-Roaming Horse and Burro Act of 1971
- The Federal Land Policy and Management Act of 1976 (FLPMA)
- The ESA of 1973 (as amended)
- The National Environmental Policy Act (NEPA)
- The Public Rangelands Improvement Act of 1978 (PRIA)
- The Fish and Wildlife Improvement Act of 1978.

Other authorities applicable to wildlife habitat management that were described in Livestock are:

- Executive Order 11987
- BLM Grazing Administration Regulations found in Title 43 of the Code of Federal Regulations (CFR) Subpart 4110.2-2(a)
- Organic Act Directive 77-75

Subtitle A, Part 24 of Title 43 CFR requires that fish and wildlife resources be maintained for their aesthetic, scientific, recreational, and economic importance because fish and wildlife populations are totally dependent upon their habitat. The several state and Federal governments must work together in harmony to develop and use these resources.

There is a clear mandate for protection and management of wetland, riparian, and floodplain habitat established by Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands). In February of 1978, the U.S. Water Resource Council published guidelines for implementing Executive Order (EO) 11988, and on June 22, 1979, the Department of the Interior published (in Federal Register Vol. 44, No. 120) procedures for floodplain management and wetland protection.

EO 11643 of February 1972, EO 11870 of July 1975, and EO 11917 of May 1976: these EOs deal with animal damage control (ADC). The orders set forth Federal policies relative to the use of chemical toxicants in ADC activities. EO 11917 authorizes the operational use of sodium cyanide on Federal lands in accordance with regulations and restrictions prescribed by the Environmental Protection Agency.

EO 11987 of May 24, 1977 (Exotic Organisms): directs executive agencies, to the extent permitted by law, to restrict the introduction and/or importation and funding of exotic species into natural ecosystems on lands they administer. It also encourages states, local governments, and private citizens to prevent introduction of exotic species.

On June 15, 1979, the Department published (in Federal Register Vol. 44, No. 117) off-road vehicle (ORV) regulations which listed restrictions on ORV use and conflicts with wildlife and their habitat (implemented E.O. 11989 of May 1977).

Several sections of the Bureau manuals apply to wildlife habitat management:

4110 Directs that vegetation resources on public lands are allocated among various consumptive and nonconsumptive uses (including wildlife) in order to maintain a desired ecosystem.

6500 Sets forth policies, guidelines, and operating procedures for the Bureau's wildlife management program.

6520 Provides guidelines for cooperation with state wildlife agencies, other Federal agencies and private conservation groups.

6600 Provides policy and direction for establishing wildlife and fish inventory and monitoring programs.

6602 Provides methodology for the classification, storage and retrieval of wildlife inventory data.

6630 Preference will be given to studying designated crucial areas of big game habitat. Special consideration will be given to habitat of rare and endangered species. NSO Manual Supplement Release No. NV-6-41 defines methodology for determining big game habitat condition and trend.

6720 Defines BLM's objectives and policy for aquatic resource management.

6740 The objective of this series is to implement a management system to protect, maintain, and enhance all wetland and riparian areas administered by BLM.

6820 Establishes BLM policy and guidance for recommending, evaluating and introducing exotic species, transplanting native wildlife species, and reestablishing native wildlife formerly indigenous to an area on BLM administered-lands.

6831 Provides procedures and guidelines for processing of animal damage control problems, needs and activities on public lands.

6840 It is Bureau policy to conserve Federal and State listed endangered or threatened animals and to utilize its authorities in furtherance of the purposes of the ESA and similar State laws.

State laws protecting animals and plants faced with local extirpation or premature extinction apply to BLM programs and actions to the extent that they are consistent with FLPMA and other Federal laws. It is also Bureau policy to ensure that the crucial habitats of sensitive animals and plants will be managed and/or conserved to minimize the need for listing by either Federal or state governments in the future.

Nevada Revised Statute 533.367 states, in part, that in the development of any water sources the applicant must ensure that wildlife which customarily use the water will have access to it.

c. Present Management Practices and Effectiveness

Congress has recognized through FLPMA and the Public Rangelands Improvement Act of 1978 (PRIA) that some segments of public rangelands are producing less than their potential for wildlife habitat. FLPMA requires that the Bureau protect, preserve, and maintain certain wildlife habitat in its natural condition and provide food and habitat for fish and wildlife on the basis of multiple use and sustained yield (FLPMA, 1976, P.L. 94-579 Section 102 (7) & (8), Section 103(c)). PRIA authorizes funding for the betterment of wildlife habitat.

The Endangered Species Act (ESA) was enacted to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved (ESA, 1973 P.L. 93-205 Section 2(b)). Section 7 of the ESA requires management agencies to consult with the U.S. Fish and Wildlife Service on any proposed action which may impact a species on the Federal threatened and endangered (T&E) list. Other laws requiring special management consideration for T & E species are the Fish and Wildlife Act of 1956, as amended; the Fish and Wildlife Coordination Act, as amended (16 USC 661-667e); the Migratory Bird Conservation Act of 1929, as amended (16 USC 715); the Land and Water Conservation Fund Act of 1965; and the Sikes Act of 1960, as amended (P.L. 93-452, 16 USC 670 G).

Furthermore, the Elko Resource Area's wildlife program and policies are consistent with the policies, plans and programs of the Nevada Department of Wildlife (NDOW), as outlined within the existing memorandum of understanding between BLM and NDOW.

One possible constraint or influence on the wildlife program involves local political considerations. The local community generally does not understand that much of the fish and wildlife in this area is being substantially limited by deteriorated habitat and that recreation and its associated economic benefits may also be adversely impacted. Ranchers, miners, and other segments of the local community may, therefore, tend to initially oppose some wildlife management proposals if they perceive that the proposals might restrict their activities.

d. Social and Economic Considerations

SOCIAL

Except for several letters received from conservation or wildlife-oriented agencies or interest groups, there has been little public concern, pro or con, at this point in the RMP developmental process concerning the issue of wildlife habitat. Prevailing attitudes on wildlife in the resource area support the concept of reasonable numbers, provided those numbers do not come at the expense of reductions in AUMs for livestock. Crucial wildlife, aquatic and riparian habitats seem to be of general concern, as is the related concern about what criteria will be used to identify present and future levels of game.

ECONOMIC

Refer to Recreation (Economic) for a discussion on wildlife and hunter-days.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present Demands

1) Terrestrial

Presently, there exist no market prices for nonconsumptive or consumptive wildlife uses. Under these conditions, the demand for wildlife should be described in terms of use and value in close association with recreational use and values.

As with recreation, the use and value of hunting are affected by the following factors:

a) site characteristics and public awareness of the site characteristics,

b) availability of substitute sites,

c) population distribution about the site,

d) the population's tastes and preferences, and

e) the population's income and leisure time.

In a study on deer hunting in Utah, Wennergren, et. al. (1973) found the first three factors to be the most important determinants of use and value. Specifically, hunter success rates and a hunting site's location with respect to the other sites and population were found most important. BLM can affect success rates, and, therefore, use, value, and hunter expenditures only through habitat management and the ability of that specific habitat/management unit to support present mule deer populations (see Wildlife Habitat Appendix).

Wildlife preservation values arise from a person's knowledge that a viable population of a particular species exists and will continue to exist for potential use by present and future generations.

2) Riparian (Existing Fishing Demand)

Nevada Department of Wildlife questionnaire data shows that the maximum (over 10 years) angler use of streams inventoried totaled 12,201 angler days per year within the resource area. This questionnaire data is only a gross indication of the actual use -- some small fishing streams are not even on the list. It is not feasible to accurately separate out the use on public segments, but more use probably occurs on public lands due to easier access.

The angler use figures provide an estimate of the existing level of fishing effort on streams, but this does not necessarily equal the degree of demand. The existing amount of "quality" stream fishing, i.e., larger fish or large numbers of catchable size fish, is very limited in the Elko RA and tends to be located in remote areas. If more fish, and particularly larger fish, were available in more streams, the fishing effort would undoubtedly by much higher. The current demand for quality stream fishing is probably not being met at current population levels, let alone meeting the demand of population growth.

Tabor Creek in the Wells RA provides an example where larger numbers of catchable size trout and easy access draws large amounts of fishing effort. The higher fishing success rate, in this case, is due partially to fish stocking. However, during 1970-1979, Tabor Creek received an estimated 25 percent of the total angler days for streams inventoried in the Wells Resource Area.

Most streams inventoried had deteriorated habitat and, therefore, supported fewer and smaller fish than they were capable of supporting. Several of these streams have the potential to produce trophy size fish, and all of them are capable of producing more fish. Rehabilitation of these streams, therefore, would undoubtedly substantially increase the amount of fishing effort and come closer to satisfying demand.

Because stream fishing is limited in areas adjacent to the Elko RA, improved fishing would draw more fishermen from these areas. The associated economic benefits to the area would increase proportionately and significantly.

b. Opportunities to Meet National and State Director Goals and Resolve Planning Issues and Management Concerns

1) Terrestrial

The goals of the Bureau of Land Management regarding management of wildlife are to:

a) recognize that wildlife is one of Nevada's basic renewable resources and,therefore, should be managed for reasonable numbers, as identified by the Nevada Department of Wildlife;

b) seek fair and equal consideration for wildlife resources on public lands;

c) balance wildlife resource management with the management of other resources;

d) protect and enhance habitat for threatened and endangered plants and animals and ensure that BLM does not take or allow any action that would jeopardize their continued existence;

e) protect wetland and riparian habitat in compliance with Executive Order 11990 and BLM Manual Section 6740;

f) maintain the essential requirements of wildlife (food, cover, water, living space, and their proper mixture) at levels and quality necessary to achieve specific wildlife ojbectives identified in the Bureau's planning process; and

g) provide opportunities for consumptive and nonconsumptive public uses of wildlife commensurate with the well-being of wildlife and the habitat upon which it depends.

Opportunities and capabilities to meet these goals and also resolve some of the planning issues and management concerns identified during this planning process include manipulation of livestock grazing and land treatments such as chaining, burning, plowing, herbicide spraying, and reseeding.

Several sites have been identified for future and treatment practices. The criteria used to determine these sites include vegetation type, slope, topography, soil type, soil depth, and precipitation. The type of land treatment that would be most effective has also been recommended. Forage (grass, forbs, and browse) production should be increased to improve habitat for wildlife. Some areas have also been identified where wildlife and wildlife habitat could be greatly enhanced through the removal of livestock.

Protective stipulations should be included in other land use decisions and management actions where those decisions or actions will affect wildlife. Monitoring studies are needed to determine progress in meeting wildlife objectives.

Habitat Management Plans (HMPs) should be developed that would consider wildlife needs for food, cover, water, living space, and birthing areas. Implementaqtion of these management tools and techniques could help to resolve conflicts.

2) Riparian

None.

c. Future Demands and Needs and the Capability to Meet Them

1) Terrestrial

Public demand for wildlife increases every year. As the human population continues to increase, it will become more difficult to meet the future demands for consumptive uses of wildlife. Certain areas within the Elko RA have potential for wildlife habitat improvement through land treatment, livestock grazing manipulation, protective stipulations or the development and implementation of allotment management plans (AMPs) and HMPs. Through application of these management practices, reasonable numbers for mule deer and pronghorn antelope can be met (see Wildlife Habitat Appendix). Upland shallow loam/pinyon juniper and upland loam/sagebrush vegetation types, which occur on a variety of loamy soils, would produce the best response to land treatment practices.

Nonconsumptive wildlife demand is also expected to increase with those activities that are associated with the use (i.e., camping, boating, and backcountry use).

2) Riparian (Projected Fishing Demand)

Population levels within the county are projected to increase 75 percent by the year 2000. Because many fishermen come from outside the area, higher population would not increase fishing demand by 75 percent, but a substantial increase is expected. Since the existing demand for quality stream fishing is not being met, the increase in fishing effort would put increased pressure on the existing scarce resources, and proportionally even less of the demand would be satisfied. This further increases the need to expand and upgrade the stream fishing resource through stream rehabilitation.

d. Constraints on Management to Avoid Undesirable Irreversible Commitments

Terrestrial and Riparian

Through the application and use of the mandates and authorities previously listed, undesirable commitments to wildlife can be avoided. Some of these mandates and authorities (FLPMA, NEPA and Executive Order 11990, et. al.) could restrict or constrain livestock grazing and mineral development.

e. Consistency with Non-Bureau Plans

1) Terrestrial

The recommendation made in this analysis are consistent with the goals and policies expressed in the memorandum of understandings with the Nevada Department of Wildlife (NDOW), U.S. Fish and Wildlife Service, Nevada State Clearinghouse Program, Secretarial Order 2948 and the Bureau of Reclamation.

a) Big Game - Reestablishment - Elk

NDOW is currently going through the formal process to reestablish elk into the Jarbidge Mountains. An evaluation process has been completed which identifies potential seasonal distribution land management parameters. This evaluation has not recognized any Bureau lands in the Elko Resource Area as having the potential for establishment of a permanent seasonal distribution. Occurrence on Bureau lands within the resource area would be limited to transient animals or possibly some use during severe winter conditions. The Charleston area would have the highest potential for this limited occurrence.

Since NDOW is not expecting or proposing any seasonal use establishment on Bureau lands in the Elko Resource Area, no reasonable number or AUM demand has been calculated. Even through NDOW does not reasonably expect elk to establish permanent seasonal occupancy, that possibility nevertheless exists. The Elko Resource Area RMP and EIS should at least knowledge and give due consideration to provide habitat components should this occur. The other option would entail NDOW removing elk from Bureau lands in the resource area should establishment occur.

b) Big Game - Potential Reestablishment - Bighorn Sheep

- South Fork of the Little Humboldt River-Owyhee Bluffs: These areas are in the Snowstorm Mountains and are within historical bighorn habitat.

- South Fork Owyhee River: This area is adjacent to a successful bighorn plant in Idaho. The Nevada portion of the canyon has more limited potential than Idaho.

- Izzenhood Range: This area was identified by Golden and Tsukamoto (1980) through a contract study for the BLM. A total of 53.9 square miles of potential habitat was identified.

- Bull Run Mountains: Areas on both U.S. Forest Service and Bureau lands have potential. No formal evaluation as to extent of habitat or feasiblity has been conducted.

At the present time, NDOW is not conducting any specific evaluations in relation to site potentials or prioritization. As future bighorn introduction programs become realistic, then full site evaluation, formal proposals, and necessary planning documents and agreements will be completed.

c) Big Game - Potential Reestablishment and Augumentation - Antelope

The Buckhorn Management Unit is being considered as a supplemental release site. The population is at a low level and is very susceptible to varying environmental factors. If the population were to be supplemented, the population would expand at a greater rate in good production years and better withstand harsh winters and poor production years. It would also serve to mix the gene pool.

The decisions on the acceptability of elk, bighorn sheep and antelope reestablishments cannot be made as a part of the planning process for the RMP. They will require agreements with NDOW if they are to be allowed.

2) Riparian

Nevada Department of Wildlife's Region II fisheries staff and the Elko District fisheries biologist jointly assigned priorities for aquatic/riparian habitat enhancement. These priorities were based on resource values, applicable laws, executive orders, regulations and Bureau and NDOW policy. As a result, aquatic/riparian habitat improvement proposals are consistent with NDOW plans, including the Lahontan Cutthroat Trout Fishery Management Plan for the Humboldt River Drainage Basin.

f. Critical Threshold Levels

1) Terrestrial

a) Sage Grouse (from the Western State's Sagegrouse Guidelines)

- No vegetation manipulation will be considered where live sagebrush cover is less than 20 percent, or on steep (20 percent or more gradient) upper slopes with skeletal soils where big sagebrush (Artemisia tridentata) is approximately 12 inches or less in height.

- The breeding complex (strutting grounds and nesting areas) will be considered as all lands within a two-mile radius of an occupied strutting ground (in some situations, depending on the quality of the nesting habitat, this radius may well exceed two miles). Control of vegetation within the breeding complex will not be undertaken within two miles of strutting grounds, or on nesting and brooding areas.

- There will be no vegetation manipulation attempted in any area known to have supported important wintering concentrations of sage grouse within the past 10 years (see overlay).

- No vegetation manipulation will be attempted along streams, meadows or secondary drainages (dry and intermittent). A 325-foot buffer zone (minimum) of living sage will be retained on each edge of meadows and drainages within areas supporting sage grouse.

- Within areas adjacent to sage grouse supportive areas, all treatment measures should be applied in irregular patterns (islands) using topography and other ecological considerations to minimize adverse effects to the sage grouse resource. Widths of treated and untreated areas can vary, except treated areas will not be wider than 100 feet and untreated areas will be at least as wide as the treated areas. The untreated areas will not be treated until food and cover plants in the treated areas attain comparable composition to that of the untreated areas (Braun and Britt, 1977).

b) Pronghorn Antelope (from Kindschy, et. al., 1982)

HABITAT

(1) Where precipitation is less than six inches per year, the vegetation should not be manipulated.

(2) The best ranges have at least 50-percent ground cover and the vegetative structure is no taller than 15-24 inches.

(3) A vegetative composition that averages 40-60 percent grasses, 10-30 percent forbs, and 5-20 percent shrubs is best.

(4) High diversity in vegetation is preferable 5-10 grass species, 20-40 forb species, and 5-10 shrubs.

(5) Where plants are seeded, it is important to select species that will ensure succulence into late summer. Dryland alfalfa is an example. Maintenance, improvment, or creation of wet meadows is likewise important.

(6) Livestock grazing systems designed to ensure sufficient seasonal forage can also benefit pronghorn. For example, the number of livestock on spring pronghorn ranges can be adjusted to assure growth of perennial forbs, and sheep can be restricted from pronghorn fawning areas for 15 days before and after the peak fawning season (May 15 to June 15). Adequate forage on winter ranges is particularly important; inadequate forage frequently limits the size of pronghorn herds.

(7) Pronghorns require two pounds of air-dried, preferred forage per animal per day (Severson et al, 1968). This should be consciously provided through management.

WATER

(1) Water sources on pronghorn summer ranges are most beneficial when no more than three miles apart and when they are designed and managed for pronghorns, even when livestock are moved to other pastures. In addition, on livestock summer ranges that serve as critical pronghorn winter ranges, some water sources can be restricted from livestock use. The restriction can help prevent overuse of surrounding vegetation by livestock.

(2) Availability of water is particularly important on summer ranges from June through October, when each adult pronghorn requires one-fourth gallon per day.

(3) Water is most palatable to pronghorn when the pH is less than 9.25 and the total dissolved solids are less then 5,000 parts per million.

FENCING

(1) Pronghorns fare best when fences for controlling livestock movement have no woven wire and are built in such a way to allow pronghorns to pass.

(2) Barbed wire fences with smooth bottom wires at least 16-18 inches above the ground, no stays, and a top wire no higher than 32 inches allow pronghorns to pass.

(3) White-topped steel fenceposts will increase the visibilit of the fence.

(4) White cloth strips tied to the top wire between posts of a new fence will also increase the visibility of the fence and will allow pronghorns to become used to its location.

(5) Lay-down panels or "antelope passes" can be constructed at strategic points to allow pronghorns to move between areas. In addition, gates can be left open when livestock are removed from fenced pastures.

c) Mule Deer (from Leckenby, et. al., 1982)

Habitat requirements are described by sizes of stands and their arrangements in time and space to meet needs of deer for thermal and hiding cover, forage areas, and fawning and fawn-rearing habitat.

- Thermal cover should be at least two to five acres. Sixty percent crown closure meets minimal year-round needs.

- Hiding cover on shrub-steppe rangeland equals vegetation at least 24 inches toll and capable of hiding 90 percent of a bedded deer from view at 150 feet. Areas of hiding cover should be between 600 to 1,200 feet.

- Maintain a diversity of plant species to maintain forage quality and availability over the seasons and to provide a buffer against plant losses to diseases or insects.

- Management for good species diversification on all winter ranges should be accomplished to assure that a high level of nutritional quality is maintained.

2) Riparian

The critical threshold for riparian/stream habitat is good or better condition. Anything less than good condition does not meet regulations; however, a positive trend (such as improving habitat in poor condition to fair) is a beneficial impact which does not meet the threshold. BLM is directed to be in compliance with Floodplain Management and Protection of Wetlands, as specified in Executive Orders 11988, 11990, and Bureau Manual 6740, which specifies the above threshold.

4. Additional Management Concerns

Terrestrial and Riparian

Other management concerns include off-road vehicle (ORV) use, rights-of-way for transmission lines and pipelines, oil field development and lands disposal. ORV use could impact antelope kidding and mule deer fawning grounds throughout the resource area. Winter ORV use could impact known bald eagle roosting areas. ORV use could also impact fish habitat and riparian areas. The perennial streams and riparian areas provide habitat for a wide aray of songbirds, small mammals, deer and raptors. Riparian areas constitute less than one percent of all public lands and are utilized by the majority of wildlife species at some point in their life cycles. Therefore, riparian habitat is considered crucial wildlife/aquatic habitat as it is the most important single habitat type available. Rights-of-way for transmission lines and pipelines could impact deer and sage grouse wintering areas, antelope kidding grounds, and riparian areas. Oil field development could impact critical deer and antelope wintering areas. Lands disposal actions could affect habitat management for mule deer, pronghorn antelope and sage grouse throughout the resource area.

5. Opportunities for Changes in Management Practices

a. Terrestrial

Several allotments have an extreme need for protection of riparian and aquatic habitats, as they pertain to terrestrial wildlife species. Such protection could be afforded by constructing fences or exclosures around the major perennial, intermittent and spring drainages to prevent removal of the tree sucker sprouts and related riparian vegetation by livestock. The aspen, cottonwood and serviceberry stands along these riparian areas provide roosting and resting areas for wintering bald eagles, in addition to suitable habitat for other raptors and prey species (such as birds, rodents and rabbits). They also provide yearlong habitat for a limited number of deer.

There are several allotments where, if allotment management plans were initiated, seasonal competition between livestock and wildlife for forage could be reduced. This is especially true within antelope kidding grounds where those specific kidding grounds should not be grazed by livestock during the spring season.

Furthermore, within those allotments where a direct conflict between livestock and wildlife is a limiting factor for deer and antelope populations increases, a habitat management plan should be implemented, increasing AUMs for the game species and reducing livestock AUMs.

b. Aquatic Wildlife and Riparian Habitat

1. Opportunities for all Stream and Riparian Areas

These opportunities do not represent changes in types of management practices but do represent changes in intensity of BLM management practices.

The first opportunity is to closely scrutinize all activities within stream and riparian areas and their watersheds to preclude unnecessary degradation. The stream and riparian areas and important watersheds are all delineated and listed in Table G-3.

TABLE G-3

MANAGEMENT OPPORTUNITIES ON IMPORTANT
FISHERIES STREAM AND RIPARIAN HABITAT

Water Name	Location	Priority Category*	Miles Administered By BLM
TUSCARORA M.U.			
Beaver Cr.	T.37N., R.52E	High (9)	3.5
Big Cottonwood Cr.	T.41N., R.51E	Medium	2.0
Bull Run Cr.	T.43N., R.52E	Medium	1.5
Chino Cr.	T.42N., R.49E	High (1)	.5
Coyote Cr.	T.36N., R.51E	High (8)	4.0
Evans Cr.	T.39N., R.45E	Medium	.3
Frazer Cr.	T.39N., R.46E	High	1.0
Humboldt River	T.31N., R.49E	Low	8.0
Indian Cr.	T.38N., R.51E	Low	.5
Jacks Cr.	T.35N., R.51E	Low	0
Jack Cr. (Little)	T.35N., R.51E	High	2.0
Jake Cr. N.F.	T.39N., R.45E	High	2.5
Jake Cr. S.F.	T.39N., R.45E	High	5.0
James Cr.	T.34N., R.51E	Low	3.0
Kelly Cr.	T.39N., R.43E	Medium	1.0
Lewis Cr.	T.39N., R.49E	Low	0
Little Humboldt R. S.F.	T.40N., R.45E	High(6)	0
Lynn Cr.	T.35N., R.51E	Low	.5
Maggie Cr.	T.33N., R.52E	Medium	0
Marys Cr.	T.32N., R.51E	Low	2.0
McCann Cr.	T.39N., R.51E	High	1.5
Nelson Cr.	T.39N., R.49E	Low	0
Owyhee River S.F.	T.47N., R.47E	High	25.0
Red Cow Cr.	T.42N., R.50E	High	5.6
Rock Cr. (Upper)	T.40N., R.50E	High(10)	1.0
Rock Cr. (Middle)	T.38N., R.47E	High(10)	6.0
Rock Cr. (Lower)	T.35N., R.47E	Medium	6.0
Secret Cr.	T.39N., R.45E	Low	0
Sheep Cr.	T.39N., R.45E	High	1.0
Six Mile Canyon	T.40N., R.51E	Medium	.7
Taylor Canyon	T.39N., R.53E	Medium	0
Toe Jam Cr.	T.40N., R.48E	High(11)	1.5
Toro Canyon Cr.	T.36N., R.51E	Low	0
Waterpipe Canyon	T.39N., R.53E	High	1.5
Williams Canyon	T.37N., R.51E	Low	0
Willow Cr. (Upper)	T.39N., R.49E	High	1.0
Willow Cr. (Lower)	T.39N., R.48E	Low	0
Wilson Cr.	T.44N., R.50E	High	3.0
Winters Cr.	T.41N., R.49E	High	1.0

TABLE G-3 (Cont)

Water Name	Location	Priority Category*	Miles Administered By BLM
North Fork M.U.			
Annie Cr.	T.44N., R.56E	Low	0
Beaver Cr. W.F.	T.43N., R.56E	High	19.5
Beaver Cr. E.F.	T.40N., R.56E	High	14.0
Bruneau R. (Upper)	T.42N., R.57E	High	2.5
Bruneau R. (Lower)	T.42N., R.57E	High	1.5
Cabin Cr.	T.41N., R.57E	High	5.2
Copper Cr.	T.44N., R.57E	Medium	.8
Dolly Cr.	T.43N., R.56E	Low	.5
Dorsey Cr.	T.38N., R.55E	High	3.5
Gance Cr.	T.40N., R.53E	High	1.5
Gold Cr.	T.44N., R.56E	Medium	0
Hay Meadow Cr.	T.44N., R.56E	Low	2.5
Humboldt R. (Middle)	T.33N., R.53E	Low	4.0
Humboldt R. N.F.	T.39N., R.57E	High(7)	16.0
Humboldt R. (Upper)	T.35N., R.56E	Low	3.0
Jackstone Cr.	T.36N., R.56E	Medium	5.5
Mason Cr.	T.43N., R.57E	Low	1.0
Penrod Cr.	T.44N., R.55E	Medium	.5
Pie Cr.	T.39N., R.56E	Low	3.0
Rosebud Cr.	T.44N., R.56E	Low	0
Seventy-six Cr.	T.44N., R.57E	Low	0
Sherman Cr. E.F.	T.35N., R.55E	High	2.0
Sherman Cr. W.F.	T.35N., R.56E	High(3)	3.0
Susie Cr.	T.33N., R.52E	High	8.0
Sweet Cr.	T.44N., R.56E	Medium	0
Thompson Cr.	T.44N., R.56E	Low	0
Willow Cr.	T.44N., R.58E	High	3.0
Buckhorn M.U.			
Dixie Cr.	T.30N., R.45E	High(5)	1.5
Humboldt R. S.F.	T.33N., R.54E	High	.4
Huntington Cr.	T.32N., R.55E	Medium	7.0
Little Porter Cr.	T.29N., R.54E	Medium	3.9
Mitchell Cr.	T.27N., R.56E	High	2.5
Pearl Cr.	T.28N., R.56E	High(4)	1.5
Smith Cr.	T.30N., R.52E	High	1.2
Ten Mile Cr.	T.32N., R.55E	Low	1.3
Trout Cr.	T.30N., R.52E	High(2)	3.9

* The first eleven of the highest priority streams have been numbered in the order of their importance.

As discussed under the existing situation, grazing, mining, road construction, water diversions, channelizations, and other land disturbances can all have adverse impacts on stream and riparian areas and their watersheds. Therefore, existing levels of use and any new proposals for these activities within the areas delineated should be carefully evaluated in terms of possible adverse impacts, reasonable alternatives, and mitigating measures.

A second management opportunity involves alternative grazing practices. As previously discussed, livestock grazing is the primary agent producing and maintaining deteriorated stream and riparian habitat within the Elko RA. Research has been completed, and some grazing practices are believed to have potential for reducing adverse impacts on stream and riparian habitats and their watersheds. Among these practices are the development of water sources away from the stream, variations in grazing systems, alternative seasons and intensities of grazing, stipulations for proper use factors on watershed vegetation, location of pasture fences to better distribute grazing, salting for livestock away from streams, and herding livestock away from streams. Fisheries biologists, wildlife biologists, range conservationists, and other specialists must work closely together and consult with users in formulating the best grazing practices to meet the unique management needs of each area.

A third opportunity involves the use of an area of critical environmental concern (ACEC) designation. For particularly unique and important stream and riparian areas, this option can provide protection of the resource, while allowing important nonconflicting uses to continue.

2) Opportunities for Deteriorated Stream and Riparian Habitat

In addition to the management opportunities considered above, special methods are usually necessary for rehabilitation of deteriorated (rated poor or fair) stream and riparian habitat. The more important deteriorated habitat areas on public (BLM) lands have been delineated. These areas were chosen through a consensus of the Elko District fishery biologist and the Region II fishery biologists from the Nevada Department of Wildlife (NDOW). A consensus was also reached for each designated area on a rating of high (H), medium (M), or low (L) priority. The priority was based primarily upon the given area's importance to fishing, the presence of T&E listed or sensitive fish species or the potential for management opportunities.

An initial period of complete rest from grazing is essential for recovery of deteriorated stream and riparian habitat. This allows time for new woody vegetation to reach a height which will withstand grazing and for streambanks to rebuild. The amount of time necessary will vary substantially from stream to stream, but it normally requires five to seven years.

The stream and riparian habitat in Nevada generally consists of narrow, linear areas strung through millions of acres of grazing land. Livestock, and particularly cattle, normally congregate along these areas and deplete most of the palatable vegetation before moving onward to graze upland areas.

It is not very practical, in most cases, to rest an entire pasture from grazing for extended periods to benefit a small acreage of stream and riparian habitat. The only remaining alternative is to fence off the stream area and manage it separately from the rest of the pasture. Water gaps or piping of water outside the exclosures for livestock is necessary where other water is unavailable.

Protection and rehabilitation by means of exclosures can benefit livestock as well as fish and wildlife. In most cases, stream and riparian areas can probably be grazed periodically following rehabilitation, with the reestablished and rejuvenated vegetation providing increased forage. The rebuilt streambanks increase water storage which, combined with more shade, can increase the amount and distance of perennial stream flow. The resulting rise in water tables may also help restore or preserve meadows.

Another management opportunity for improving deteriorated stream and riparian habitat involves privately owned segments. Just as BLM management on public stream segments can influence privately owned segments, the reverse is equally true and important. Rehabilitation of public stream habitat may not be fully possible without improvements on private stream habitat.

The most desirable opportunity for these private segments is to acquire and manage them like other BLM stream and riparian habitat. But if an easement, memorandum of understanding, or other arrangement for habitat protection could be set up, it would be preferable to the existing situation. A stream is a system. Only through management of the entire stream and its watershed can its full potential be restored.

The other management opportunities for rehabilitation of deteriorated stream and riparian habitat involve artificial means for hastening improvements. The primary methods in this category are instream improvements and revegetation.

Instream improvements most appropriate to Nevada streams are primarily pooling structures such as logdams. Most deteriorated streams have very few quality pools. Natural rehabilitation of stream and riparian habitat will eventually, as a rule, produce some quality pools. Construction of logdams in small streams and placement of large boulders in large streams, however, can provide badly needed living space for fish until natural pools are formed.

Other types of stream structures can be beneficial in certain situations. All structures should be carefully designed to fit the unique needs of each stream.

Revegetation of stream and riparian areas may be necessary where deterioration has eliminated most of the natural vegetation. Hand planting of native grasses, shrubs, and trees can hasten rehabilitation and may reestablish plant species which have been eliminated from the area.

3) Implementation of Management Opportunities

One planning criterion under the Wildlife Habitat (Riparian/Aquatic) issue specifies that these areas will be managed to improve them to, or maintain them in, at least a good condition class. In addition, a planning criterion under real estate management provides for acquisition of certain private lands to meet critical resource needs.

It has been concluded that even existing demand for quality stream fishing is probably not being met. Furthermore, the anticipated increase of the human population residing within the resource area will require substantial increases in fishing just to meet demand to the same relative degree. It should be noted that rehabilitation of wetland and riparian areas also increases terrestrial wildlife, which can help meet demands for hunting. Improvements can also help meet the demands for aesthetic enjoyment. Even if demand were not a factor, BLM still has the mandates for action as outlined above.

Economic viability is not directly applicable in management of wetland, riparian, and stream habitat. The costs of alternative options for management are important considerations, and they will help determine the rate at which options will be implemented. However, as outlined earlier, management requirements, including planning criteria, mandate that these areas will be managed properly. Furthermore, even if economic viability were required, it logically should be applied to the use that is causing the problem.

Given practical limitations, such as funding levels and certain political constraints, the planning criteria stipulating that wetland and riparian areas be managed to improve them to, or maintain them in, at least a good condition class probably cannot be fully implemented within the first ten years. However, rehabilitation must be implemented as quickly as reasonably possible in order to comply with the mandates discussed earlier.

The prioritizing of the most important areas for rehabilitation provides good guidance in selecting the sequence of areas to improve. The same prioritizing of privately owned areas to consider for acquisition provides guidance for implementing this option as the opportunity arises. The actual implementation of specific improvements for each individual area will in most cases, be determined through activity planning.

H. WILD HORSES

1. Introduction

Wild horse management is governed by the Wild and Free-Roaming Horse and Burro Act of December 15, 1971. The purpose of the Act is to ensure the preservation of a unique feature of our Western heritage, as well as to prevent undue competition among wild horses, livestock and big game.

a. Planning Question

What areas will be designated as herd management units?

Planning Criteria

Maintain wild horse use in areas where wild horses occurred on December 15, 1971 and where land ownership patterns are compatible with management of wild horses.

b. Planning Question

How many wild horses will be maintained within designated herd units?

Planning Criteria

Establish population levels by considering minimum numbers necessary to maintain viable herds and maximum numbers compatible with vegetation requirements.

2. Current Management Situation

a. Present Conditions and Trends (Physical Profile)

When the 1971 Wild and Free-Roaming Horse and Burro Act was passed, there were many horses on the Elko Resource Area rangelands that were privately owned and intermingled indistinguishably with wild horses. The horses inhabited the area for many years prior to 1971 and were descendents of ranch horses, some of which were licensed years ago, and some of which were escaped, abandoned or released. During the seven years following 1971, claims were made on these private horses and many were gathered. The current wild horse herd management area boundaries are areas that supported wild horses in 1971 and had no claims for private horses within them and/or areas that had viable populations of wild horses remaining in them after the claiming period was completed.

The Tuscarora Management Unit of the resource area supports five wild horse herd management areas: Owyhee, Rock Creek, Little Humboldt, Bullhead and Little Owyhee. The Winnemucca District manages the Little Owyhee and Bullhead herds of which only part run on the Elko Resource Area. Horse use has

remained roughly within the herd boundaries, with expansion within the herd areas occurring during higher population densities. There are fences and some natural barriers between the herd areas, however, there is still interplay between the herd areas.

Records of population census have been kept since 1972 but are rough due to varying census techniques. In January 1981 and October 1981 to January 1982 a gather removed 201 and 220 wild horses, respectively, from the three herd areas managed by Elko (Owyhee, Rock Creek, Little Humboldt). Because horses seem to be moving between herd areas during some years, analysis of census information was based on total populations for all three herd areas. Data reveals that prior to the gathers in 1981 and 1982, the herds were adding between 44 and 68 animals per year to each population. However, since the removal, the herd seems to be adding between 20 and 35 animals per year to the population. Current population estimates based on helicopter counts in June 1984 are:

Herd Area	Adults	Colts	Total
Owyhee	48	9	57
Rock Creek	95	24	119
Little Humboldt	91	16	107
			283

Ecological condition in 1982 on the Owyhee Herd Area was rated as poor on four plots. Utilization between the gathers in 1981 and 1982 was light at one plot, moderate at another and heavy at the remaining two. Utilization in 1982, after the gather, was light to moderate. Utilization in 1984 was slight.

Ecological condition in the Rock Creek plots was good and fair in 1982. Utilization was moderate on the good condition site and light on the fair condition site. Utilization in 1983 was slight on both sites.

Ecological condition on the Little Humboldt area was poor on one plot and fair on the other two in 1983. Utilization was slight at all three sites in 1983 (see Table H-1).

TABLE H-1

Herd Area	Plot Number	Ecological Condition and Year	1982 Utilization	1983 Utilization
Owyhee	1	Poor 1982	Moderate	Light
	2	Poor 1982	Moderate	Slight
	7	Poor 1982	Light	
	8	Poor 1982	Light	
Rock Creek	11	Good 1982	Moderate	Slight
	13	Fair 1982	Light	Slight
Little Humboldt	2	Poor 1983	---	Slight
	4	Fair 1983	---	Slight
	5	Fair 1983	---	Slight

The only other wild horse herd management area is located in the Buckhorn Management Unit. The Diamond Hills herd had 20 wild horses in 1975, and 15 were observed in the fall of 1983. During the 1984 census, no horses were observed. Recent completion of a fence within the herd use area may have resulted in changed use patterns. Ecological condition of this area is estimated as good.

During the 1984 census effort, 13 horses were observed outside of any herd management areas. They were sighted between Buckskin Mountain and Grindstone Mountain.

There are also numerous horses in the southwestern portion of the Buckhorn Management Unit in the Buckhorn, Geyser and Scotts Gulch Allotments. On November 19, 1973, Carrie Dann filed a Certified Affidavit with Elko BLM, claiming ownership to 400 to 600 horses grazing on public lands. A total of 497 horses were removed and claimed between 1974 and 1981. However, periodic aerial counts confirm there are still at least 300 horses in the area covered by Carrie Dann's horse claim. These horses are still claimed by Mary and Carrie Dann, but no grazing fees are paid. This trespass case is currently before the U.S. Supreme Court.

b. Mandates and Authorities for Use and Protection

The Wild Free-Roaming Horse and Burro Act (Public Law 92-195), signed December 15, 1971, states, "It is the policy of Congress that wild free-roaming horses and burros shall be protected from capture, branding, harassment, or death; and to accomplish this they are to be considered in the area where presently found, as an integral part of the natural system of the Public Lands."

The Federal Land Management and Policy Act (Public Law 94-579) signed October 21, 1976, in Section 404 authorized the use of helicopters for gathering, inventorying, etc., of wild horses.

The Public Rangelands Improvement Act (Public Law 95-514) signed October 25, 1978, continues the policy of protection of wild free-roaming horses and burros and in Section 14 requires the Secretary of the Interior to maintain a current inventory of numbers to determine appropriate management levels. It authorized the removal of "excess" animals, the adoption of horses by private individuals and granting of title to horses after one year of private care. The Act also required a research project to be initiated by the National Academy of Sciences to further knowledge of wild horses and burros population dynamics and their interrelationships with wildlife.

The objectives of the BLM Wild Free-Roaming Horse and Burro Protection Management and Control Regulations (43 CFR 4700) is to provide criteria and procedures for protecting, managing and controlling wild free-roaming horses and burros as a recognized component of the public land environment. Subpart 4710.1-4 requires coordination with state agencies on management and research activities for wild horses and burros. Subpart 4720.1-.3 outlines procedures for the removal of claimed trespass horses and burros. Subpart 4730.1-.7 identifies inventory and management needs for wild horses and burros. It also authorizes livestock closures and designations of wild horse or burro ranges. It also identifies parameters for use of aircraft management. Subpart 4740.1-.5 specifies information on removal and relocation of excess or problem animals. Subpart 4750.1-.3 discusses management of wild horses and burros on private lands. Subpart 4760.1-.2 specifies enforcement provisions.

There are no Bureau manuals for the wild horse and burro program. Washington Office Instruction Memorandum No. 83-289, Change 1 and Change 2 have provided policies and procedures that guide wild and free-roaming horses and burros management on public lands. This guidance provides specifics on land use planning, inventory, monitoring, management activities, herd management area plans, removals, destructions, use of aircraft and motor vehicles, private maintenance and compliance and enforcement.

Other Washington Office instruction memorandums concerning wild horse and burro management are:

83-680	Provides specifications for helicopters and pilots used in wild horse roundups.
84-283	Provides guidance for the cooperative management agreements (CMA) program as it relates to wild horses and burros.

Nevada State Office instruction memorandums concerning wild horse and burro management are:

NV-83-88	Required an update of population estimates throughout the state.

NV-83-84 Clarifies Nevada's position regarding the disposal of wild horse or burro carcasses.

NV-83-26 Identifies the procedures for processing privately owned animals during wild horse gatherings and/or livestock impoundments.

NV-82-305 Clarifies Nevada's position in determining wild horse and burro numbers for MFP/RMP analysis and decision.

c. Present Management Practices and Effectiveness

The herd management areas were identified in the mid 1970s after completion of the Tuscarora and Humboldt MFPs. In the late 1970s and early 1980s, resource specialists estimated forage use was exceeding capacity in the three herd management areas in the northwestern portion of the resource area. A drought during this time resulted in competition between all animals in the area for water. The drought resulted in changes in use patterns of all grazing animals. The 1980 census for all three herd areas prior to the gather was 503. A joint gather plan was prepared for the five herd areas, including the two managed by the Winnemucca District. The gather plan stated, "over the past years the increase in wild horse numbers and drought in conjunction with other grazing animals have depleted the range condition and adversely affected the ecological balance of the area."

The gather removed 421 horses between January 1981 and January 1982 from Elko's three herd areas. Range studies established about six months after the gather indicate the ecological conditions ranged from poor to good. However, utilization seemed to have decreased in 1983 and 1984 from 1982. Current populations of horses are roughly one-half of what they were in 1980 before the roundup.

Currently, there are no known areas where forage use exceeds capacity in these three herd areas. Herd management area plans (HMAPs) have not been prepared for any of these herd areas. Currently, wild horses in this area are not creating any known conflicts with other resources. However, existing allotment fences may be partially responsible for horse numbers shifting to other herd areas. This shift of numbers to other herd areas may result in conflicts in the future because there is a significant amount of intermingled unfenced private land in both Rock Creek and Little Humboldt areas. In times of drought, the poor water distribution and availability on the Owyhee will again result in restricting wild horses, as well as other animals, to a more limited distribution near water. Additional pasture or allotment boundary fences could result in significant fence maintenance problems and create problems with wild horse distribution and use patterns.

In the Diamond Hills herd the ecological condition is good, and forage use is not known to be exceeding the capacity. The completion of the Brown Pasture Fence in the fall of 1983, however, may have resulted in excluding the wild horses from that portion of the herd area. Long-term impacts of this project are not known.

d. Social and Economic Considerations

There are no known local dependents on wild horses.

Public attitudes about wild horses and their management vary between individuals and are often based on their perception of the impacts of wild horses to various other resources. However, most groups would support the idea of management of wild horse populations in a "manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands," as is mandated in the Wild Free-Roaming Horse and Burro Act of 1971.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present Demands

The present demand for wild horses is primarily from interest groups such as National Mustang Association, Wild Horse Organized Assistance, Animal Protection Institute, etc. Generally, their concerns are to see that the intent of the Wild Free-Roaming Horse and Burro Act is followed; that is, to maintain a viable population of wild horses within their 1971 areas of use and within the ecological balance of the resources. Individuals who want to adopt wild horses also provide a demand, however, nationally it is not expected that demand will exceed supply for a very long time. The general public who support wild horse and burro management and protection also provide a non-consumptive demand.

b. Opportunities to Meet National and State Director Goals and Resolve Issues and Management Concerns

National and State Director goals are to preserve wild free-roaming horses and burros on public lands as symbols of our heritage and enhance the diversity of life forms, to protect wild free-roaming horses and burros from illegal capture, branding, harassment, or death, to manage wild free-roaming horses and burros as components of the public lands in a manner that maintains or improves the rangeland ecosystem, and to provide humane care and proper treatment of wild horses and burros.

The Elko Resource Area has been working toward these goals. Preparation of herd management area plans for the herds in the Owyhee area will further this effort. Incorporation of wild horse concerns within other management plans and projects will also be necessary to facilitate these goals. Monitoring of the

Diamond Hills herd will be necessary to determine the impact of the new fence and the herd distribution. Monitoring of the few horses remaining outside of the herd areas will also be necessary to determine if these horses are increasing or if they will eventually die out and not become a problem.

c. Future Demands and Needs and the Capability to Meet Them

The demand for wild horses is not expected to increase significantly in the future. In 1982, 9,350 wild horses were removed from public lands nationwide and 7,250 wee adopted. In 1983, 6,658 were removed and 5,095 were adopted (U.S. Department of Interior, 1984). Nevada's current management emphasis is existing numbers and monitoring as per Nevada State Office Instruction Memorandum NV-82-305. The forage needs for the wild horses will increase if the numbers increase. If numbers are maintained at current levels, then a significant impact to the resources is not expected. Social and economic ramifications are not expected to be significant if wild horse populations are kept at current levels.

d. Constraints on Management to Avoid Undesirable Irreversible Commitments

Maximum numbers of horses are estimated to be around 550 for the three herd areas in the Owyhee area because it was at this level that horse removal was previously necessary. Maximum numbers for the Diamond Hills herd are unknown.

e. Consistency with Non-Bureau Plans

There are no known non-Bureau Plans that address wild horses contiguous to the Elko Resource Area.

f. Critical Threshold Level

Nevada State Office Instruction Memorandum NV-82-305 states that current wild horse and burro numbers will be used in land use planning as a starting point unless one or more of seven criteria are met. None of these criteria are met for the wild horse herd areas in the Elko Resource Area. It is generally accepted that to maintain a "viable" wild horse population, a minimum of 50 animals must remain in the herd.

4. Additional Management Concerns

The apparent redistribution of wild horses in the three herd areas (Owyhee, Rock Creek and Little Humboldt) may be of concern. Monitoring is certainly necessary. Data on age distribution, production, survival and migration is needed to make effective management recommendations. Some of this information can be collected during programmed horse removals. Some data on distribution and migration can also be gathered during regular census work, however, it might be helpful to collar some selected horses to make data gathering easier.

5. Opportunities for Changes in Management Practices

Herd management area plans (HMAPs) are needed for the three herds in the Owyhee area. The plans will identify problem areas, specific management objectives, improvement projects and monitoring necessary. When allotment management plans and habitat management plans are prepared, wild horse movement patterns, water and forage needs must also be considered. Necessary mitigation efforts may include improving water availability, "let-down" pasture fences, scheduled wild horse roundups (i.e., every five years) and others.

I. FOREST RESOURCES

1. Introduction

Increasing public demand has made it necessary to develop a management program that will maintain or improve the supply of forest products (i.e., firewood, posts, pinenuts and Christmas trees) for private and commercial uses. Portions of the Elko Resource Area need to be identified as suitable for the harvest of forest products.

a. Planning Question

What is the production capability of forest lands and how will the demands for forest products, in relation to this production, be met?

Planning Criteria

1) Identify a yearly harvest level that will maintain or improve the sustained yield capability of the land.

2) Designate harvest areas that will achieve management goals for sustained yield and multiple use resource values while reaching, or attempting to reach, the demand for wood products.

b. Planning Question

What portion of the yearly harvest will be available for commercial versus private uses?

Planning Criteria

Determine what portion of the allowable cut will be identified for commercial versus private uses.

2. Current Management Situation

a. Present Conditions and Trends

Forested areas occur throughout the Elko Resource Area. Refer to the overlay titled "Forest Resources". A forest inventory was conducted in 1981.

There are four major tree species within the Elko Resource Area. These species are pinyon pine, Utah juniper, curlleaf mountain mahogany and quaking aspen. They occupy approximately 74,000 acres.

Currently, the pinyon-juniper community, consisting primarily of pinyon pine, Utah juniper and mountain mahogany, covers approximately 60,000 acres. This pinyon-juniper community is generally located within the Buckhorn Management Unit.

Scattered stands of quaking aspen occur throughout the Elko RA, occupying approximately 14,000 acres. These stands are primarily located in the Tuscarora and North Fork Management Units.

The major products derived from those forest species include: firewood, posts, Christmas trees and pinenuts. In FY83 there were approximately 970 cords (873 thousand board feet (MBF)) of firewood, 900 posts and 500 Christmas trees sold. The pinenut crops completely failed in FY83. Because the pinenut crop varies so drastically from year to year, there are no average figures.

Pinyon pine is used for fuelwood, pinenuts and Christmas trees. Utah juniper is used for fuelwood, posts and poles. Mahogany and aspen are generally used for fuelwood. In addition, the forest ecosystems within the Elko RA have a very high aesthetic value, as well as producing other multiple use resources, including water, wildlife habitat and recreation sites.

The pinyon pine, juniper and mountain mahogany stands are generally in good condition. However, a great deal of the aspen stands are in a declining condition class. Studies and management practices are necessary to protect and enhance this species.

b. Mandates and Authorities for Use and Protection

Public Law (P.L.) 94-579, the Federal Land Policy and Management Act of 1976 (FLPMA), requires that the public lands be managed in a manner which recognizes the nation's need for domestic sources of minerals, food, timber, and fiber. The act also requires that the public lands be managed under the principle of multiple use and sustained yield without permanent impairment of the productivity of the land and the quality of the environment.

The Public Domain Timber Management Policy statement directs the Bureau of Land Management to manage public land forest areas to: contribute to meeting the nation's demand for wood products, manage the timber resources under the principles of multiple use and sustained yield, obtain fair market value for timber and other forest products sold and removed, improve timber and forest products utilization, and facilitate the management and public use of forest land.

The Public Domain Woodlands Management Policy statement directs the Bureau of Land Management to optimize benefits from the management of woodlands under its jurisdiction by incorporating principles of multiple use and environmental quality.

c. Present Management Practices and Effectiveness

FIREWOOD

Both live and dead firewood cutting is allowed. Deadwood, with the exception of aspen, is allowed to be cut throughout the resource area. Aspen, being a desirable but less frequently occurring species, requires special management to ensure maintenance of existing stands. Wholesale cutting, which has occurred in certain areas in conjunction with big game and cattle use, has resulted in overmature and/or severely declining conditions. Some aspen cutting is allowed on a case-by-case basis.

The cutting of live firewood is confined to special management areas within the pinyon, juniper and mahogany community. To maintain conflicts at a minimum, separate cutting areas are set up and administered for commercial cutters. Selective cutting practices are utilized within the live cut areas to keep the woodlands in as productive state as possible.

Permits for cutting wood may be obtained at the District office or through the mail. Both stipulation sheets and maps showing cutting area locations are attached to the permits.

CHRISTMAS TREES

Christmas tree harvesting is open to the general public throughout the resource area within the pinyon, juniper and mahogany community. Permits are issued over the counter. Specific harvest areas are set up and administered for commercial cutters. These areas are put out on a bid basis. Other areas not identified as a commercial unit may be negotiated on with area manager approval.

POSTS

Post harvesting is allowed area-wide to both individual and commercial cutters. Post cutters are guided toward designated greenwood units to harvest their posts. However, with area manager approval, they may cut the posts in other areas as well. We are currently identifying and setting up post harvest areas in order to manage the harvesting of that resource more intensively.

PINENUTS

Pinenuts harvesting is allowed area-wide. Individuals may collect up to 25 pounds without a permit. If an individual wants more than 25 pounds or if the pinenuts are being harvested for resale, a permit is required.

Commercial pinenut harvesting areas are set up on a bid system. Other areas (those not set up for bid) may be negotiated with area manager approval.

UNAUTHORIZED USE

Unauthorized use is currently a substantial problem within the woodlands. It is estimated that at least two times the amount harvested legally is taken out illegally. Patrols are currently being utilized to help alleviate this problem.

OTHER RESOURCE ACTIVITY CONCERNS

Most or all resource activities impact forest resources in one way or another. The majority of those activities are generally insignificant at this time. Two of the resource activities that do play a major role in the proper management of woodlands are fire management and large ungulate use.

Because of the limited acreage of woodland within this resource area, fire has the potential to affect the sustained levels of use substantially.

Vegetation manipulations to benefit livestock grazing can be detrimental to proper woodland management. Also, heavy livestock use that has occurred within aspen stands impacts those vegetation communities.

The checkerboard lands pose as the major problem area, making management of the resources within that particular land pattern difficult. Other potential problem areas exist where access routes that reach into the woodlands cross private lands. Legal access is required in those situations.

d. Social and Economic Considerations

SOCIAL

Residents of the resource area, as well as BLM resource area personnel, are concerned that the demand for Christmas trees and firewood is growing faster than the supply. Historically, there has been little specific management of woodland products in the resource area beyond providing permits to the public for firewood, posts, poles, and Christmas trees. This, coupled with indiscriminate cutting of Christmas trees and firewood in certain areas, has created a critical situation. It is estimated that there is about a two-year supply of firewood within the resource area, while the current demand for Christmas trees exceeds the supply. Although both of these woodland products are available within the adjacent Wells Resource Area, the harvesting of those woodland products would involve traveling an additional 100 miles round-trip.

Although closing the resource area to further harvesting of these woodland products would initially create some ill-will among local residents, it could be expected that in the long-term, the majority of those residing in the area would see the need for and support more intensive woodlands management.

ECONOMIC

Revenues received by the Bureau of Land Management from permit sales in the Elko RA of firewood, posts, and Christmas trees were approximately $6,210 in fiscal year 1983. Based on fair market values, the benefit to permit holders is estmiated at about $106,000 in retail prices. While of great benefit to individual consumers, harvesting and sales of forest products from BLM lands are of little significance within the area economy.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present Demands

Listed below are the sales of forest products within the Elko Resource Area for FY83 (numbers approximate)

Firewood	970 cords
Posts	900 each
Christmas Trees	500 each

Pinenut crops vary drastically from year to year. Because production cannot sustain a commercial sale, and because permits are not required for the individual that obtains 25 pounds or less, there are no current harvest levels available.

The communities of Elko and vicinity, Battle Mountan and Carlin constitute the majority of the demand. A small percentage comes from the rural areas throughout the county and from out-of-state.

The Elko Resource Area is currently able to meet the demand for woodland products. Demand has recently shown to increase by twenty percent per year. If firewood use continues to rise at this rate, we will be harvesting the full allowable cut by 1986. After 1986, the demand for firewood should exceed supply limits. The Christmas tree harvest is now at the full allowable cut level.

Demands on Other Resources Affecting Forest Resources

The Cedar Ridge and Red Spring Wilderness Study Areas, in their present status, reduce the yearly allowable cut for firewood by approximately 20 percent.

The allowable cut could be increased by harvesting aspen. However, because of the intense grazing pressure within these forested zones, regeneration is drastically reduced. Without sufficient regeneration, these stands could be eliminated if harvesting were to take place.

b. Opportunities to Meet National and State Director Goals

There are several specific goals designed to allow for the orderly harvest of wood products:

- Develop and maintain an extensive inventory and classification of public woodlands.

- Manage available woodlands under the principle of sustained yield, maintaining an allowable harvest to provide a permanent source of wood products for future generations.

- Receive fair market value from the sale of wood products.

- Manage woodlands to achieve a positive benefit/cost ratio.

- Facilitate the management of other resources through wood product sales.

- Resource protection

These goals will be met if support for the forestry program continues.

c. Future Demands and Needs and the Capability to Meet Them

A large number of the residents within Elko County use and rely on forest products. Demand for forest products is expected to continue at present levels or increase. Several factors influence the demand on forest products in this area. Two of the key factors are population and the price of other fossil fuels. With a 75 percent increase in population expected in Elko County by the year 2000, demand for forest products is expected to exceed capabilities.

The pinyon pine has become a particularly sought after Christmas tree. Its durability and pleasant scent make it very attractive. Christmas tree sales vary between 400 to 600 trees being harvested annually. Demand will increase as the population increases; however, the annual sustained yield allowance is only around 500 to 600 trees.

Demand for wood posts vary from year to year depending on the price of steel posts, as well as fencing needs. An average of about 1,500 posts are sold annually.

Demand for fuelwood will depend on the population level in the area and the costs of other sources of energy. Sales are expected to increase by a minimum of 20 percent annually. The sustained level of use is approximately 1,600 cords per year, based on professional judgment (Ritter, 1984). The high price of fossil fuels has caused many people to turn to wood as a secondary and even a primary source of home heating. In addition to providing a recreational opportunity, the savings derived from gathering wood could add up to a considerable economic benefit for local residents.

Pinenuts are also harvested in the area. Native Americans have used pinenuts in their diet for many generations. No projections are made for pinenuts because the crops are too variable.

The supply of firewood and Christmas trees pose as the largest problem in meeting the demand. The District does have a larger forest resource within the Wells RA, however, individuals will have to drive greater distances to obtain those products. Therefore, there would be a greater expense in both time and money.

To keep the supply problem from becoming an even greater one, woodlands will have to be managed for the production of forest products. Any other resource activity that removes forested land out of the allowable cut base will have a significant impact.

d. Constraints on Management to Avoid Undesirable Irreversible Commitments

None

e. Consistency with Non-Bureau Plans

There are two agencies contiguous to the resource area that have goals and objectives regarding forest management.

The U.S. Forest Service plans on initiating a forest inventory beginning in 1986. After the inventory is completed, the goal will be to bring the forest types under more intensive management. The current goals and objectives are to meet the local personal demand (non-commercial) for forest products by selling permits over the counter.

The Nevada Division of Forestry plays a minor role within the resource area regarding forest management. They are basically involved with urban community forestry in which they provide assistance to private land owners for tree and shrub improvement. Other related duties include cooperation with other agencies making management plans, undertaking controlled burns for land improvement and fire rehabilitation work.

f. Critical Threshold Levels

The yearly allowable cut, within the sustained yield capability, is the level at which the forests must be maintained before a critical resource level is reached. Refer to "Future Demands and Needs and the Capability to Meet Them," for the sustained levels of use.

4. Additional Management Concerns

Additional management concerns would include: 1) the mineral and energy activities within the forest lands; 2) the management of livestock within the forest lands, with special interest directed toward the aspen communities; and 3) access problems associated with the harvest of forest products.

5. Opportunities for Changes in Management Practices

There is an opportunity and need to make beneficial changes in the current management practices. Beneficial changes include: 1) providing improved access into high public concentration areas is perhaps one of the largest opportunities to improve the public's image of programs within the BLM. Improved access into public woodcutting areas should be of high priority, as they are heavy public use areas. Each year the District receives numerous complaints on the condition of the roads into these areas; 2) Improving livestock management within aspen stands that are in a poor or declining condition, and with the use of sivicultural practices, aspen communities may be improved into a condition class that would better benefit multiple use; 3) by authorizing improved mitigative measures on mineral and energy activities, those actions could pose a lesser threat to other resources and, in some cases, could be beneficial. An example would be creating new access into forested areas, opening new areas for harvesting.

Forest management can be used to improve other values, such as wildlife habitat, and for producing additional livestock and wildlife forage. With the use of sivicultural practices, including thinnings or selective cuts, both an improvement in stand condition and an increase in desirable forage and habitat conditions could be achieved.

J. MINERALS

1. Introduction

Development of locatable (hard rock) and leasable (oil and gas and geothermal) minerals is necessary to meet national, regional and local demand and to provide increased employment and an expanded tax base for local communities. The Federal Mining and Mineral Policy Act of 1970 declared that it is the policy of the Federal government to foster and encourage the development of mineral resources in an environmentally sound manner.

a. Planning Question

What areas will be open to leasable mineral development?

Planning Criteria

1) Identify areas that are open to mineral leasing with no special protection required.

2) Identify areas needing special protection, but otherwise open to mineral leasing.

3) Identify areas which should be closed to mineral leasing in order to protect special or unique values or uses that are incompatible with mineral development.

b. Planning Question

What areas will be open to locatable mineral development?

Planning Criteria

1) Identify areas that are open to locatable mineral development with no special protection required.

2) Identify areas needing special protection, but otherwise open to locatable mineral development.

3) Identify areas which should be closed to locatable mineral development in order to protect special or unique values or uses that are incompatible with mineral development.

2. Current Management Situation

a. Present Conditions and Trends

LOCATABLE MINERALS

Lands within the Elko RA are major producers of gold and barite. Much of the land producing minerals or having high

mineral potential (see mineral potential overlays) is public land, and the mineral industry is highly dependent on public lands for mineral exploration and development. In 1983, Nevada produced 47 percent of the annual U.S. gold production of 1,957,379 troy ounces (USDI, Bureau of Mines, 1984), and the Elko RA alone produced an estimated 25 percent of U.S. annual gold production. There are currently (June 1984) four major gold producing companies in the resource area and 50 to 100 companies actively exploring for gold.

Barite mining is also significant in the resource area, with two mines currently active. Six to twelve barite properties with substantial reserves could become productive in the resource area if the price of barite increased (price increase cannot be quantified because it would depend upon types of uses of barite).

The Elko RA also contains known reserves of lead, zinc, silver, tungsten, copper, mercury, zeolites, and diatomite. Of these commodities, only lead and zinc have any likelihood of significant production in the foreseeable future, and it is expected that significant production of lead and zinc is not very likely due to the high cost of production and modest rate of return (Brooks, professional judgement, 1984).

There has been a substantial decrease in both production and exploration for base metals and industrial minerals within the resource area and nationwide. This trend has been predicted to continue through the 1990s by the Bureau of Mines.

Precious metal prices are fairly high, and many companies have concentrated much of their exploration efforts in a search for precious metal deposits. Most of the companies mining in the Elko RA can make a profit as long as the price of gold stays above $300/troy ounce. Gold mining is expected to be substantial in the resource area until well past the year 2000.

LEASABLE MINERALS

The Elko RA currently has two producing oil wells. As a result of these successful exploration efforts, the resource area has seen modest increases in wildcat drilling and seismic exploration in recent years. The number of leases has increased dramatically in recent years, and most of the resource area is currently leased. Seismic exploration is now active in the previously little explored Owyhee Desert region. This exploration has been spurred by discoveries in similar types of terrain in Oregon and by advances in seismic technology which allow better delineation of rock formations and structures below volcanic cover.

The basin and range structure may preclude discovery of any large or giant oil fields in the Elko Resource Area, while conversely presenting the opportunity to discover a number of smaller oil fields (those which have less than 100,000 barrels

of oil in place). It is expected that oil and gas exploration will continue to increase moderately in the foreseeable future. Since much of the area has not been extensively drilled, any sizable discoveries could increase the level of exploration dramatically.

Geothermal activity is going through a transition from exploration to development. Most of the good geothermal prospects have been drilled. Development and production wells have been drilled at Beowawe, and construction of a 10-megawatt plant is planned. Regulatory changes allowing more acreage per company in each state and use of geothermal energy for direct use applications have been proposed. If these changes are made, there could be a modest increase in geothermal activity in the Elko Resource Area.

The resource area contains oil shale and phosphate, however, there has been little recent activity involving these leasable minerals. This trend is expected to continue.

MINERAL MATERIALS

The demand from, and dependence on public lands for mineral materials is significant in the Elko RA. Considerable demand for medium to large disposals of mineral materials to build roads occurs as a result of widely dispersed projects such as mine development, oil drilling, and maintenance of existing roads. Considerable demand for small sales of a variety of mineral materials also occurs around Elko and other communities. The level of demand for mineral materials is expected to increase steadily. The only current or expected problem in meeting the demands for minerals materials is a shortage of good soil near Elko.

b. Mandates and Authorities for Use and Protection

OIL AND GAS

The basis for all oil and gas development on BLM lands is the Mineral Leasing Act of February 25, 1920, as amended.

The normal operating procedures for hydrocarbon leasing, exploration and production are described in Title 43 of the Code of Federal Regulations (CFR) Subparts 3100 through 3130.5. Many of these regulations are administrative only, regarding such matters as the conduct of competitive lease sales. Consequently, Subpart 3109, which addresses surface management, is the only section of importance to this study.

The regulations in 43 CFR 3109.2-1 give BLM authority to attach special stipulations to all permits and leases. Regulations in 43 CFR 3109.4 give BLM the authority to reserve or segregate lands for any purpose and to stipulate drilling procedures in accordance with the reservation. It is through use of the lease stipulations authorized in these regulations that BLM is

able to control the hydrocarbon drilling process. BLM officials, especially surface protection specialists, enforce these stipulations on each site.

The National Environmental Policy Act (NEPA) of 1969 provides for the composition of a detailed statement of the environmental effects of major Federal actions. It requires an environmental assessment (EA) for routine projects or an environmental impact statement (EIS) for very large projects. The EIS is routinely composed for each competitive lease sale, while EAs are on file for all drilling in the Elko RA. However, an unusual situation may require a special document.

The BLM Wilderness Review program affects oil and gas development activities. Section 603 of FLPMA requires that public lands administered by BLM be reviewed for wilderness potential. The review is to be conducted using the criteria for identifying wilderness characteristics described in Public Law (P.L.) 88-577, the Wilderness Act.

As stipulated by FLPMA, the Secretary of the Interior has until October 1991 to report his recommendations as to the suitability or nonsuitability of each WSA to the President of the United States. The President has two years from that date to report his recommendations to Congress under the provisions of the Act. This may, of course, be completed at an earlier date; however, while areas are under wilderness review, or appeal to the Interior Board of Land Appeals (IBLA), they must be managed under the IMP (USDI, BLM, 1979). This places certain restrictions on all minerals activities, including oil and gas.

SALABLE MINERALS

The Mineral Materials Act of July 31, 1947, as amended July 23, 1955, provides for the sale of common varieties of sand, gravel, clay, and stone. Previously, these materials fell under the Mining Law of 1872 and could be claimed just like any deposit of valuable minerals. Sales of common varieties can be made non-competitively for amounts under 100,000 cubic yards; competitive bidding is required for larger amounts. Free use permits for common varieties can be issued, even for very large volumes, to Federal government agencies, units of state and local governments, and nonprofit organizations, if the materials are not to be used for commercial purposes.

The details of disposal of the common varieties are found in 43 CFR 3600 and 43 CFR, Subtitle A, Part 23. The regulations call for appraisal of materials by the BLM District Office.

LOCATABLE MINERALS

FLPMA is important to mineral activities in the Elko RA in that FLPMA is the basis for the 43 CFR 3809 and 3802 regulations which are intended to prevent undue and unnecessary degradation of the public ands by mining activities authorized by the Mining Law of 1872, as amended. FLPMA also requires mining claim recordation at BLM State offices and amends the Mineral Leasing Act of 1920 as to the collection and disposal of royalty fees.

The regulations under 43 CFR 3800, specifically Subparts 3802 and 3809, are applicable in the Elko RA. Briefly summarized, these regulations provide for submission of a plan of operations for projects over five acres or for any project inside a WSA. The plan can be modified, rejected, or approved by BLM before the proposed operation commences. Though projects under five acres outside WSAs are not subject to approval, notice of such projects must be filed with BLM. Potentially, these regulations provide the most stringent controls over locatable minerals yet available to BLM.

Recently, a U.S. District Court in California upheld use of the 3809 regulations to prevent occupancy on a mining claim, citing local sanitation rules as sufficient grounds for BLM to evict the individuals. The court found that this action did not deny the right provided by the 1872 Mining Law.

The Multiple Mineral Development Act provides that any mining claim or millsite filed after August 13, 1954 shall be subject to a reservation of all leasing act minerals (which will continue even after a patent is issued). Hence, mining claims and development of leasable minerals can coexist, unless the claim antedates the effective date of the law, which precludes leasing. The practical effect of this law in the Elko RA is that oil and gas leases can be let where mining claims exist, or that mining claims can be filed where hydrocarbon leases are present.

The Mining Claims Rights Restoration Act of 1955 simply opens lands withdrawn for powersites to location and patent of mining claims. However, the government is not liable if the properties are later flooded by powersite development.

c. Present Management Practices and Effectiveness

OIL AND GAS

Leasing stipulations are attached to leases as both standard stipulations on or attached to the lease and from the District oil and gas environmental assessment. Applications for a permit to drill (APDs) wildcat oil wells are approved by the State Director, with surface protection stipulations developed in the Elko RA

Seismic lines are approved by the Elko Area Manager, with input from staff specialists and the District oil and gas environmental assessment.

GEOTHERMAL

Geothermal activities are managed the same as oil and gas.

MINERAL MATERIALS

Two general procedures are used to permit mineral material disposals. Disposals in the more remote areas are quite dispersed throughout the Elko RA and it is difficult to anticipate demand in a particular area. This results in disposals being authorized as a result of user demand on a case-by-case basis. In more populated areas where the demand is more predictable, community pits are designated and disposals are restricted to these areas.

The great majority of disposals are from existing pits. Reclamation is required as per 43 CFR 3600.

MINING LAW ADMINISTRATION

Notice and plans-of-operations (3809 regulations) are managed to prevent undue and unnecessary degradation of the public lands. General procedures in processing notices and plans consist of staff review followed by a field examination if a significant amount of surface disturbance is proposed. In the case of plans, this information gathered is used to prepare an environmental assessment. For notices, the information is used to prepare mitigating measures.

Compliance checks are completed periodically, generally two to three times a year for significant operations, to ensure that the operation is proceeding as planned and that no undue and unnecessary degradation is occurring.

Incidents of non-compliance are pursued vigorously and every effort is made to reclaim areas disturbed by operators in non-compliance.

d. Social and Economic Considerations

SOCIAL

The minerals issue is closely related to the issue of wilderness. The concern has been consistently expressed by industry spokespersons that subsequent developments in the field of minerals and energy exploration technology will undoubtedly lead to minerals and energy discoveries in areas where that is not possible at this point in time utilizing the current exploration "state-of-the-art." Wilderness designation

will, in the view of the industry, "lock-up" the wilderness areas, thus precluding minerals and energy exploration activities at some future time when the "state-of-the-art" has progressed to the point that exploration becomes an economically viable option in those areas previously thought to have low or non-existent minerals or energy potential.

This view is shared by many residents in the area, especially those whose livelihood is dependent upon the mining industry. Those individuals and/or interest groups who are preservation and/or environmentally oriented strongly oppose this point of view. Since only 2.7 percent of the total acreage in the resource area is currently under study as wilderness, these individuals and interest groups feel that the remaining 97.3 percent provides ample opportunity for subsequent minerals and energy development.

ECONOMIC

Elko County derives substantial income, employment and tax revenues from the mining industry. Total personal income from mining activities, in 1982, was approximately $21 million, or 12.6 percent of total county industrial income. Eight hundred ten persons were employed. In that same year, the mining industry provided $473,514 in tax revenues (16.7% of all property tax revenues) for the county. This was based on an assessed valuation for net proceeds of mines of $11.2 million and an assessed value of mining property of $27.2 million.

During fiscal year 1983, there were 1,528 oil and gas and geothermal leases on the public lands in Elko County, encompassing a total of 3,523,137 acres. The Bureau of Land Management receives annual lease revenues from these holdings, estimated at $1.00 per acre for oil and gas leases, and $1.50 per acre for geothermal leases, of which the State of Nevada is paid 50 percent. Based on these estimates, $1.8 million is paid to the state as its share of current lease revenues. The state redistributes these revenues to the counties through the Distributive School Fund.

3. Analysis of Demands, Opportunities and Capabilities

a. Capability to Meet Present and Future Demands

The present demand for locatable and leasable minerals varies widely according to mineral type. For many commodities, such as barite, silver, oil shale and geothermal energy, which occur in the Elko RA, the present economic situation limits or prohibits production at a profit. For other commodities, such as gold, oil, and gas, the demand currently exceeds production levels. Changes in the economics of the various minerals occurring in the Elko RA can be expected over time resulting in mine openings and closings. Predictions of future demand for

specific mineral commodities is extremely difficult, although it is expected that demands for gold, oil and gas will remain high throughout the 20-year planning horizon of this RMP.

Salable minerals are widespread in the Elko RA and the amounts of material greatly exceed present demand or expected future demand except for a shortage of good quality soil in the vicinity of Elko. The demand for mineral materials is local and chiefly related to the construction business.

Future demands and the ability to meet them are very difficult to predict. Economics, availability of land for exploration and development, and geologic parameters are the major factors influencing mineral demand in the resource area. Of the above-listed parameters, only the availability of land is subject to control. Retention of lands having good to high mineral potential is the most likely method of meeting future demands.

b. Opportunities to Meet National and State Director Goals and Resolve Planning Issues and Management Concerns

Meeting national and State Director goals are generally related to the timely processing of the various minerals actions at the resource area level. As long as the minerals program is adequately funded and staffed with knowledgeable and experienced personnel, the resource area staff will continue to meet these goals.

c. Constraints on Management to Avoid Undesirable Irreversable Committments

Mineral extraction is an irreversible commitment which can be mitigated to some extent by proper reclamation. Emphasis on a detailed analysis of proposed mineral exploration and development activities will, to a considerable extent, minimize undesirable irreversible commitments.

d. Consistency with Non-Bureau Plans

The primary area for need of consistency with non-Bureau plans for minerals activities is with the Humboldt National Forest. Leasing of U.S. Forest Service lands by the Bureau has recently been formalized by a memorandum of understanding. Other minerals activities involving both agencies, such as mining actions, are addressed on a case-by-case basis. Oil and gas leasing and stipulations in recreation areas involve both agencies and need to be coordinated.

Other non-Bureau plans do not address minerals in specific terms.

e. Critical Threshold Levels

Mineral commodity development is dependent on economically viable operations. Critical threshold levels would be reached at the profit breaking point for each company.

From a minerals resource management perspective, any action which restricts the exploration and development of a commodity in high demand would have the potential for a significant adverse effect.

In designated wilderness areas, mineral development would be highly restricted as prohibited. A critical threshold level would be reached if _____ percent of the good or high mineral potential areas in wilderness study areas is segregated from mineral entry.

If oil and gas or geothermal lease development is subject to time of year restrictions on _____ percent or more of the resource area, a critical threshold level will be reached.

4. Additional Management Concerns

None.

5. Opportunities for Changes in Management Practices

Updating the Elko District oil, gas and geothermal environmental assessment with new wildlife data and a re-evaluation of the various stipulations attached to leases through the RMP process would result in less distruption of wildlife habitat, recreation areas and other uses of the public lands, while possibly being less burdensome to lessees.

Implementation of the Bureau's Cave Management Policy in the resource area could result in reduced destruction of fragile and irreplaceable cave formations. At the least, an inventory of caves should be done in order to determine the location and condition of caves.

Emphasis on increased compliance on seismic oil and gas exploration and mining notices and plans, along with better training in road construction and other related minerals activities, would result in less unnecessary degradation of the public lands and better reclamation of disturbed lands. These capabilities are primarily related to having a trained minerals staff, with sufficient staffing to allow a consistently high level of compliance work.

K. CULTURAL

1. Current Management Situation

a. Present Conditions and Trends

The Elko Resource Area contains 1,654 known prehistoric and historic sites (Elko RA files). Prehistoric site types include lithic scatters, workshops, quarries, petroglyphs, and rock shelters. Historic sites include towns and camps associated with mining and railways, ranches, millsites, and historic trails. None of these sites is listed in the National Register of Historic Places, although four have been determined eligible for inclusion. Table K-1 shows a chronology of human occupation in the Elko RA.

Most of the known archaeological sites within the resource area were recorded during project-related inventories. Since the information obtained from these surveys does not represent a random sample, only general inferences about site location and density are possible. Although a Class II inventory has never been undertaken, it is estimated that over 50,000 sites are present on public land within the resource area (Jaynes, 1984). These sites are divided into two broad categories: historic and prehistoric.

(1) Historic and Prehistoric Sites and Human Occupation Table

Historic sites represent the period after Euro-American contact for which written records are available. Typical sites of this category include towns, camps, and structures related to mining, railroads, and ranching, as well as immigrant trails. The former mining town of Mineral Hill and the Humboldt Trail are examples.

Prehistoric sites represent the earliest occupation of the area up to Euro-American contact. As much more time is represented by this category, it is not surprising that the greatest number of sites are prehistoric. Rock shelters, petroglyphs, quarries, and most frequently, lithic scatters are typical of this category. The Tosawihi quarry is a good example for this cattegory, as it contains evidence of human occupation over the last 7,500 years.

TABLE K-1

CHRONOLOGY OF HUMAN OCCUPATION IN THE
ELKO RESOURCE AREA

1 Pre-Llano over 15,000 years before present
(No evidence)

2 Paleoindian 15,000 to 10,000 years before present
(Represented by one isolated Folsum point)

3 Archaic (Desert Archaic) 10,000 to 1,500 years before present
(Well documented)

4 Late Prehistoric (Fremont) A.D. 500 to A.D. 1300
(No evidence of Fremont culture, however, other people's occupation of the area is well documented)

5 Proto-Historic (Numic) A.D. 1300 to A.D. 1850
(Well documented)

6 Historic A.D. 1850 to Present

Source: Adapted from 1981, James S.R.; Prehistory, Ethnohistory, and History of Eastern Nevada

b. Mandates and Authorities for Use and Protection

The Antiquities Act of June 8, 1906 (P.L. 59-209) requires preservation of American antiquities and prohibits appropriating, excavating, improving, or destroying any historic or prehistoric ruin or monument or any object of antiquity found on government-owned or controlled land without the permission of the secretary of the department of the government having jurisdiction over the land. Prior to any disposal, an investigation is made to determine the presence or absence of antiquities. The extent and intensity of the investigation by an archaeologist depends upon the suspected values involved.

The Historic Sites Act of August 21, 1935 (P.L. 77-292) and the National Historic Preservation Act of October 15, 1966 (P.L. 89-665) require an investigation of any proposed land sale or use to determine the presence of any sites, buildings, structures or objects of national significance in American history. If there are any such items of significance, they must be preserved and the sale or land use denied if mitigation cannot be satisfactorily accomplished.

The National Environmental Policy Act of 1969 (P.L. 91-190) requires that each Federal action be evaluated to determine if it has major or minor environmental impact. The evaluation considers alternative actions and mitigating measures.

Information derived from the evaluation is considered by the Federal manager in arriving at a decision. Where there are significant impacts, environmental impact statements are prepared and published, and a notice is published in the Federal Register.

Executive Order 11593, May 13, 1971, titled Protection and Enhancement of the Cultural Environment, sets forth implementing procedures for Federal agencies under the various Historic Site Acts. It requires consultation with State Historic Preservation Officers, the keeper of the National Register of Historic Places, and the Advisory Council on Historic Preservation, when cultural values of national historic significance are found on lands proposed for disposal. If loss of significant cultural values cannot be mitigated, the lands cannot be transferred from Federal ownership.

c. Management Opportunities

1) Historic Resources

Although no inventory has been undertaken, numerous historic camps, towns, and mines are known to have structures or cemetaries on public lands. Such areas are of interest to the public and should be so managed. A concern is that such areas are frequented by vandals, as well as sightseers. Potential and current user days are difficult to estimate, as these resources have not been actively managed in the past. An inventory and evaluation of these resources will be necessary to determine which areas may require stabilization, fencing, and signing, as well as to determine the management level required.

2) South Fork Shelter Recreation Area-Buckhorn Management Unit

About ten miles southwest of Elko, a highly significant archaeological site was excavated in the 1950s. Most of this site was subsequently destroyed by gravel procurement and has since been fenced and stablized. The site represents over 4,000 years of prehistoric occupation in the area. In addition to the prehistoric site, this is also the Hastings cutoff emmigrant trail traversed by the ill-fated Donner Party. This area is also popular for swimming and fishing, as well as a convenient end point for rafting down the canyon of the South Fork of the Humboldt. An access to this area will be needed, as both routes to it traverse private land. This area will lend itself well to an interpretive site, as it is already a popular recreation area.

3) Tosawihi Quarry-Tuscarora Management Unit

The Tosawihi Quarry is about 38 miles northwest of Battle Mountain within the Ivanhoe Mining District. White

opalite from this area was quarried as early as 7,500 years ago for the manufacture of stone tools. Prior to Euro-American contact, the people living in the area of Battle Mountain were called the Tosawihi or White Knife Shoshone because of stone knives manufactured from this material.

A district within the Tosawihi Quarry will be nominated to the National Register of Historic Places by the Nevada State Museum. In addition to the prehistoric importance of this area are the abandoned cinnabar mine sites. Mercury production from this area was important to the war effort during the 1940s. The remnants of these mines may be good representatives of a mining history narrative. A further management possibility is the procurement of raw material for modern day flint knappers. Some areas are suited to this activity if properly managed to avoid impacting the prehistoric character of the area. The primary land use conflict anticipated is mining, as the area is mineral in character.

4. South Fork Owyhee River - Tuscarora Management Unit

This is a wilderness study area which is seasonally popular for float trips. Rafters commonly begin in Nevada, pass through southern Idaho and terminate in southern Oregon. A cultural resource inventory of the Nevada segment has never been undertaken. Surveys conducted within the Idaho and Oregon segments of the river indicate high cultural values.

d. Human Occupation

The Elko Resource Area was occupied as early as 15,000 years ago. The early inhabitants relied on the hunting of now extinct big game species. Large herbivores (such as ground sloths, mastodons, and camels were the principal quarry. Social organization consisted of small, highly mobile bands ranging over a large territory in pursuit of the herds. This is known as the Paleoindian period.

A change in subsistence pattern developed about 10,000 years ago associated with a change in the climate. The paleoindian way of life gave way to a broad spectrum hunting and gathering subsistence. As the Pleistocene lakes receded, the climate became warmer and drier, and the large herbivores hunted by Paleoindians disappeared. As this occurred, a more intensive use of vegetal resources developed, along with hunting of a wider variety of game, including rabbits, ground squirrels, antelope, and sheep. This period is known as the Archaic.

The next period of cultural change is called the late Prehistoric and is represented in part by the Fremont people who were horticulturally based, relying secondarily

on hunting and gathering. The Fremont period dates from A.D. 500 to A.D. 1300 and is best represented in Utah and adjacent areas of eastern Nevada. There are no known Fremont sites within the Elko Resource Area, but this period is represented on the eastern slope of the Ruby Mountains immediately adjacent to the Elko Resource Area. The late Prehistoric period is better represented by people who relied primarily on a hunting and gathering way of life.

Numic speaking people migrated into the area by A.D. 1200 to A.D. 1300. These people continued to occupy the area until disrupted by contact with explorers and settlers in the 19th century. These people were the direct ancestors of the Western Shoshone who still live in the area.

The historic period is marked by the first penetration of whites into the area which occurred in 1826 when Peter Skene Ogden led his men through the northern Elko County area.

e. Effects and Trends

Cultural Resources are finite and fragile. As such, all land development uses will lead to a downward trend in cultural resources. Mining, land disposal, and energy development have the greatest effect on the downward trend in cultural resources since avoidance is not possible. Grazing, range improvement, most realty actions, and recreation have a lesser effect since disturbance is either more diffuse or avoidable through design modifications. The principal adverse effect of recreation is through increased vandalism brought about by increased use of the area. With interpretive signs, this effect can be ameliorated by public awareness and self-policing.

Cultural resource sites will continue to decline as new areas are developed (which is the case for any finite resource). The effect is unavoidable but can be mitigated to some extent by preserving a representative sample of the types of sites present within the resource area. At this stage, however, it is not possible to determine what is a representative sample of the types of archaeological sites. Very little of the resource area has been inventoried, and most of the inventories which have been completed were undertaken for specific project developments. The result has been that a few areas have been intensively inventoried, whole no information is available for other areas. Known archaeological sites within the resource area, therefore, only represent where inventories for projects were conducted (and not necessarily where there is a greater frequency of sites). This situation is particularly noticeable within portions of the North Fork and Tuscarora Management Units.

L. T/E & SENSITIVE PLANT SPECIES

1. Current Management Situation

a. Present Conditions and Trends

Presently, there are no known officially listed threatened or endangered or candidate plant species within the Elko RA, as defined by the Endangered Species Act of 1973, as amended.

However, three species Erigeron latus (broad fleabane), Ivesia rhypara (Grimes ivesia), and Antennaria arcuata (arching pussytoes), are currently (Federal Register 11/28/83) listed by the U.S. Fish and Wildlife Service (USFWS) as Category 2 species. Category 2 species are species for which information is currently available, and is in the possession of the USFWS, that indicates the probable appropriateness of listing the species as either endangered or threatened, but for which sufficient information is not presently available to biologically support a listing of the species at this time. By giving species this classification, the USFWS is calling attention to and encouraging research that may answer some of the unanswered questions, concerns, distribution and taxonomic issues, etc.

Presently, there are no known locations of critically endangered (Nevada Revised Statute 527.270) state-listed plant species. However, in addition to the three plants mentioned above, the following five species are listed by the Nevada T/E Plant Workshop: Hackelia ophiobia - Owyhee River stickseed; Artemisia packardiae - Packard's sagebrush; Artemisia papposa - fuzzy sandwort; Astragalus ptero carpus - winged milk vetch; Lepidium nanum - pulvinate pepperweed.

The Owyhee River stickseed is listed in the state's "watch" category and the remaining four plants are within the "other rare" category. The "watch" category contains plants of uncertain abundance and distribution and/or those for which threats cannot be reasonably defined. The "other rare" category includes rare plants not considered to be under any identifiable threats, while certain species are retained on the Nevada T/E Plant Workshop's list as "other rare". These species are not considered to be sensitive species.

Preferred habitat sites of the candidate for threatened, endangered species listing and state-listed "watch" and "other rare" species within the Elko RA is shown in Table L-1. Known locations of these eight plant species are noted on the T&E Overlay.

b. Mandates and Authorities for Use and Protection

The Endangered Species Act (ESA) of 1973, as amended, requires that T/E plant species be identified and conserved. Under Section 7 of the Act, the Bureau is required to actively manage

species in danger of extinction, to ensure their conservation, and to consult with the U.S. Fish and Wildlife Service (USFWS) on any action that results in a (positive or negative) "may affect" decision. The consultation process ensures that any action carried out by the Bureau does not jeopardize the continued existence of a Federally-listed species. The 1979 amendments to Section 7 require BLM to confer with USFWS on actions which may affect a "proposed" species. The December 15, 1980 Federal Register lists over 60 species in Nevada which could be "proposed" for listing at anytime.

The Act provides civil and criminal penalties for violations of its provisions and permits citizens to sue either individuals and/or agencies resulting in penalties being assessed against responsible officials, or to require compliance with the Act, making it one of the most stringent statutes affecting the Bureau. The official Federal listing of a plant species (as T/E) creates a nondiscretionary, legally binding obligation on the part of the Bureau to use all its authorities to prevent the extinction of the plants, as well as to avoid any action which would jeopardize the species' "continued existence".

BLM/State cooperation in matters concerning offical state-listed species is mandated by Title II, Section 202(c)(3) of the Sikes Act. It states, in part, that cooperative agreements under this Act must ". . . provide adequate protection for fish and wildlife officially classified as threatened or endangered pursuant to Section 4 of the ESA of 1973 or considered to be threatened, rare, or endangered by the state agency. . . ." Although plants are not specifically mentioned in the Sikes Act, the ESA of 1973 requires their consideration.

c. Present Management Practices and Effectiveness

It is Bureau policy to protect, conserve, and manage Federal and state-listed or candidate listings of sensitive, threatened, or endangered plants and to use its authorities in the furtherance of the purposes of the Endangered Species Act and any similar state laws. It is also Bureau policy to ensure that the habitats of all sensitive plants are managed and/or conserved to minimize or eliminate the need for Federal or state listing in the future. Therefore, while the species recognized as sensitive or species of special concern have less regulatory protection, any Bureau action should avoid a direct "may affect" situation.

Management of Federal or state-listed species must be implemented with the objective being the eventual delisting of such species. Sensitive species management should be carried

out so that their continued survival is ensured and that future listing is not necessary.

1) Federal T/E, State-Listed T/E, and Sensitive Species Lists

In order to implement the Bureau's policy, it is imperative that each District develops and maintains an up-to-date list of all Federal T/E, state-listed, and sensitive animal/plant species which are known or suspected to occur on BLM-administered lands within the District or on adjacent lands which may reasonably be expected to be influenced by Bureau actions. Extreme care should be taken to include on each District's sensitive species list only those plant species for which there is reasonable evidence for concern. All species which are candidates for Federal T/E status will automatically be considered as, and included on, the sensitive species list.

2) Inventory

It is also the responsibility of the Bureau under the ESA to conduct and maintain, on a continuing basis, an inventory of the occurrence, populations, and distributions of T/E and sensitive plant species. To accomplish this mandate, all employees who make discoveries of new populations of T/E and sensitive plants will be required to document it.

TABLE L-1. Preferred Habitat Sites of Candidates for T/E Species Listing and State-Listed "Watch" and "Other Rare" Plants within the Elko RA

	HABITAT SITES				
	Barren sparsely vegetated soils, rocky knolls-cliffs & talus slopes	Continually wet, seasonally saline/non-saline meadow riparian areas	Black sagebrush, big sagebrush, grass, bitterbrush	Pinyon-juniper Woodlands	Shadscale greasewoc
CANDIDATE T/E PLANTS					
Erigeron latus	X				
Ivesia rhypara	X		X		
Antennaria arcuata		X			
STATE-LISTED PLANTS					
Hackelia ophiobia	X				
Artemisia packardiae	X				
Artemisia papposa		X	X		
Astragalus pterocarpus		X			X
Lepidium nanum	X		X	X	

M. WATERSHED

GENERAL

The Elko Resource Area falls within three major hydrographic regions: The Humboldt River Basin, Snake River Basin, and the Central Region (State Engineer's Office 1971). Draining only the northern tip of Diamond Valley, the Central Region occupies less than five percent of the RMP area.

The Humboldt River drains the lower two-thirds of the Elko RMP area from eighteen major valley's or tributaries. The Humboldt River is the largest river wholly contained within the state, terminating halfway between Lovelock and Reno in the Humboldt Sink. Water from the river is at its full appropriation and used primarily for irrigation. The Humboldt Basin is characterized by alluvial and lacustrine filled valleys bounded on the east and west by steep to moderately sloping mountain fronts. These valleys, because of the orientation of faulting occurring in the Basin and Range, are arranged in a north and south direction and are normally three times as long as wide. Altitude of the valley floors ranges from 4700 feet to 6000 feet.

The Snake River Basin is situated in the northern one-third of the RMP area. Drainage flows into the Snake River system, which is a tributary to the Columbia River. Valleys or hydrographic areas are characterized by high tablelands and highlands formed in massive lava flows.

Valley floors average between 5100 to 5700 feet high. Except for Independence Valley, the basin is cut by steep walled drainages.

Occurring at least within a portion of almost every major valley in the RMP area, is the downcutting or gullying of the drainage network. Almost all the major drainages including the Humboldt River and its tributaries have undergone downcutting. Beause the State of Nevada claimed almost all major drainages as their state share upon reaching statehood, public ownership is restricted to the smaller drainages. Many of these small drainages are downcutting and eroding laterally because of one or a combination of overgrazing, road construction and mining.

SPECIFIC

The following is offered as a result of a comment during the Issue Identification phase of the RMP.

The City of Carlin uses several springs for their domestic water supply. The city delineated the watershed boundaries contributing to the springs and requested that the water quality and quantity of these springs be protected. Watershed boundares are delineated in the attached figure. Land ownership within the watershed is checkerboard with approximately 46 percent public and 54 percent in private ownership. Total size of the watershed is 28715 acres.

Water from the springs is supplied by underground flow through gravels. At the spring source, an impermeable zone pinches the water supply to the surface.

The watershed boundaries go from the crest of Marys Mountain at 7699 feet to 4920 feet at the spring source. Marys Creek is the only perennial stream within the watershed, the creek is perennial for about one-quarter of its length, primarily within the mountains. The creek is entrenched

at its upper end leaving vertical walls nearly thirty feet high. Sediments from the upper creek have been deposited in its lower reaches. A community gravel pit is located in section 20, T. 33 N., R. 50 E., MDM, in a part of the lower reach with redeposited gravels.

Cattle graze this area on a year long basis. Water quality measurements were made on upper Marys Creek in August of 1977, and fecal coliform counts were measured at 600 (No. 100/ml). Parameters set for public drinking water by the Environmental Protection Agency (EPA) allow no coliform counts. These fecal coliforms in the surface water, however, probably have no effect on the springs since underground flow through the gravels would eventually cleanse the water.

Marys Mountain is within several miles of Carlin Gold's Maggie Creek deposit, and contains several recently mined small barite pits. Exploration for barite and precious metals has been an ongoing practice in this area for the last three years, with two to three years notices (43 CFR 3809) filed each year.

Management Options: Adopt a grazing plan which would promote a plant community in good to excellent condition. When areas burn they should be examined for protective seedings. Any mining or exploration should be mitigated to prevent erosion and/or contamination of the water resources.

WILDLIFE HABITAT APPENDIX

All data presented within this Appendix is based on information provided by the Nevada Department of Wildlife publication "Wildlife habitat plans for the future - input into land managment agencies planning systems - Elko Resource Area" edited by Duane Erickson, October 1983.

TABLE 1

MULE DEER POPULATION ESTIMATES - MANAGEMENT AREA 6
(Selleck Hart 17-Year Summary)

YEAR	BUCK	DOE	TOTAL ADULT DEER
1967	3,072	9,110	12,182
1968	5,542	10,090	15,632
1969	4,292	9,991	14,283
1970	7,285	18,682	25,967
1971	5,379	17,987	23,366
1972	5,675	11,255	16,930
1973	4,963	13,445	18,408
1974	2,968	6,600	9,568
1975	2,584	6,164	8,748
1976	808	2,609	3,417
1977	1,458	4,418	5,876
1978	2,748	6,459	9,207
1979	2,367	5,741	8,108
1980	3,898	8,107	12,005
1981	3,734	8,519	12,253
1982	2,807	7,226	10,033
1983	2,367	6,607	8,974
TOTAL	61,947	153,010	214,957
AVERAGE	3,644	9,001	12,645
EXPANSION (50%)			
REASONABLE NUMBERS			18,968

47%

TABLE 2

MULE DEER POPULATION ESTIMATES - MANAGEMENT AREA 7
(Selleck Hart 1966-1983)

TOTAL MANAGEMENT AREA

YEAR	BUCK	DOE	TOTAL ADULT DEER
1966-70 Average	8,361	21,487	29,848
1971	8,033	20,971	29,004
1972	4,707	14,298	19,005
1973	3,316	12,231	15,547
1974	2,510	11,934	14,444
1975	2,366	11,220	13,586
1976	4,638	13,335	17,973
1977	9,107	19,001	28,108
1978	6,561	16,671	23,232
1979	4,915	12,038	16,953
*1980	4,605	11,719	16,324
*1981	4,396	11,268	15,664
*1982	4,327	11,826	16,153
*1983	3,418	8,962	12,380
REASONABLE NUMBERS			21,534

Management Area within Elko Resource Area

Existing Numbers	13,962 — 4000
Reasonable Numbers	16,939 — 7000

even pass 57% of Reasonable

*MA 8 deer herd estimate excluded

TABLE 3

MULE DEER POPULATION ESTIMATES - MANAGEMENT AREA 14
(Selleck Hart 15-Year Summary)

TOTAL MANAGEMENT AREA

YEAR	BUCK	DOE	TOTAL ADULT DEER
1959-63 (Average)	2,632	4,111	6,743
1964-68 (Average)	2,469	4,429	6,898
1967-73 (Average)	2,232	4,967	7,199
1974	755	1,672	2,427
1975	466	1,041	1,507
1976	393	1,600	1,993
1977	472	1,995	2,467
1978	525	2,453	2,978
1979	568	2,678	3,246
1980	703	3,115	3,818
1981	940	3,404	4,344
1982	1,305	3,932	5,237
1983	1,366	4,418	5,784

15-YEAR AVERAGE - 6,947

REASONABLE NUMBERS 4,349

Management Area within Elko Resource Area

Existing Numbers	2,893
Reasonable Numbers	6,939

ef. 42% of reasonable

TABLE 4

1983-84 MULE DEER POPULATION ESTIMATES

(Selleck-Hart)

NDOW MGMT. UNIT	POPULATION ESTIMATE	MALES		FEMALES		YOUNG	
		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
061-065	8,161	1,083	13.3%	4,349	53.3%	2,729	33.4%
066-068	3,092	517	16.7%	1,444	46.7%	1,132	36.6%
070	15,166	2,314	15.3%	9,700	64.0%	3,152	20.7%
100	15,269	2,113	13.8%	10,871	71.2%	2,285	15.0%
140	7,908	1,158	14.6%	4,579	57.9%	2,171	27.5%
150	3,197	457	14.3%	1,607	50.3%	1,133	35.4%

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WILDLIFE HABITAT INPUT

Mule Deer Reasonable Numbers and AUM Demand

M.U. Tuscarora, North Fork & Buckhorn
DISTRICT ELKO
STATE NEVADA
NDOW MGMT. AREA 6

	WILDLIFE HABITAT AREA			REASONABLE NUMBERS DEER			AUM DEMAND	
MTN. RANGE	MAP SYMBOL	% USE BLM	% USE USFS	BLM	USFS	SEASON OF USE	BLM	USFS
Independence	DS-1	15%	85%	1,428	8,089	3/16-11/15	2,856	16,178
Pinyon-Sulphur Spr.	DS-2	100%		700		3/16-11/15	1,400	
Humboldt-Union	DY-1	100%		302		3/16-11/15	604	
				1,500		11/16-3/15		
Mtn. City-Mahoganies	DW-1	—	100%	—	1,000	3/16-11/15	2,000	
		15%	85%	480	2,720	11/16-3/15	480	2;720
White Rock - South Fork	DW-2	100%		500		3/16-11/15	1,000	
				2,000		11/16-3/15	2,000	
Taylor - Jack Cr.	DW-3	—	100%	—	500	3/16-11/15	1,000	
		25%	75%	1,000	3,000	11/16-3/15	1,000	3,000
Carlin - Adobe	DW-4	100%		981		11/16-3/15	981	

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WILDLIFE HABITAT INPUT

Mule Deer Reasonable Numbers and AUM Demand

M.U. Tuscarora, North Fork & Buckhorn
DISTRICT ELKO
STATE NEVADA
NDOW MGMT. AREA 6

WILDLIFE HABITAT AREA				REASONABLE NUMBERS DEER			AUM DEMAND	
MTN. RANGE	MAP SYMBOL	% USE BLM	% USE USFS	BLM	USFS	SEASON OF USE	BLM	USFS
Tuscaroras	DS-3	100%		4,479		3/16-11/15	8,958	
Snowstorm	DS-4	100%		1,000		3/16-11/15	2,000	
Owyhee-Midas - Tuscarora - Boulder	DY-2	100%		870 2,267		3/16-11/15 11/16-3/15	1,740 2,267	
Butte-Antelope - Rooster-Sheep-Dumphy-Palisade	DW-5		100%		5,070	11/16-3/15		5,070
Starr Ridge	DW-6	100%		50		11/16-3/15	50	

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WILDLIFE HABITAT INPUT

Mule Deer Reasonable Numbers and AUM Demand

M.U. North Fork
DISTRICT ELKO
STATE NEVADA
NDOW MGMT. AREA 7

	WILDLIFE HABITAT AREA			REASONABLE NUMBERS DEER			AUM DEMAND	
MTN. RANGE	MAP SYMBOL	% USE BLM	% USE USFS	BLM	USFS	SEASON OF USE	BLM	USFS
Jarbidge	DS-1	100%		1,587		4/1-10/30	2,777	
Adobe Mts.	DW-1	100%		2,712		11/1-3/30	3,390	
Double Mt.	DW-2	100%		2,640		11/1-3/30	3,300	

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WILDLIFE HABITAT INPUT

Mule Deer Reasonable Numbers and AUM Demand

M.U. Buckhorn
DISTRICT ELKO
STATE NEVADA
NDOW MGMT. AREA 10

	WILDLIFE HABITAT AREA			REASONABLE NUMBERS DEER			AUM DEMAND	
MTN. RANGE	MAP SYMBOL	% USE BLM	% USE USFS	BLM	USFS	SEASON OF USE	BLM	USFS
Ruby	DS			200		5/1-11/15	1,300	
	DW			200		11/15-3/15	800	
	DSPR			750		3/15-4/30	1,150	

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WILDLIFE HABITAT INPUT

Mule Deer Reasonable Numbers and AUM Demand

M.U. Buckhorn
DISTRICT ELKO - Battle Mountain
STATE NEVADA
NDOW MGMT. AREA Area 14 Unit 141

MTN. RANGE	WILDLIFE HABITAT AREA MAP SYMBOL	% USE BLM	% USE USFS	REASONABLE NUMBERS DEER BLM	DEER USFS	SEASON OF USE	AUM DEMAND BLM	AUM DEMAND USFS
Cortez Range	DS-1	100%		1,271		4/1-10/31 (7 months)	2,224	
	DW-1	100%		763		11/1-3/30 (5 months)	954	
Sulphur Spring	S-1	100%		400		4/1-10/31 (7 months)	700	
	KW-1	100%		1,438		11/1-3/30	1,798	
	W-1	100%		477		11/1-3/30 (5 months)	596	

400 + 7 = 700
4

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WILDLIFE HABITAT INPUT

Antelope Reasonable Numbers and AUM Demand

M.U. Tuscarora
DISTRICT ELKO
STATE NEVADA
NDOW MGMT. AREA 6

	WILDLIFE HABITAT AREA			REASONABLE NUMBERS ANTELOPE			AUM DEMAND	
MTN. RANGE	MAP SYMBOL	% USE BLM	% USE USFS	BLM	USFS	SEASON OF USE	BLM	USFS
Owyhee Desert	AY-1	100%		400		12 months	960	
YP Desert	AY-2	100%		100		12 months	240	
						TOTAL	1,200	

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WILDLIFE HABITAT INPUT

Antelope Reasonable Numbers and AUM Demand

M.U. Buckhorn
DISTRICT ELKO
STATE NEVADA
NDOW MGMT. AREA 15

	WILDLIFE HABITAT AREA			REASONABLE NUMBERS ANTELOPE			AUM DEMAND	
MTN. RANGE	MAP SYMBOL	% USE BLM	% USE USFS	BLM	USFS	SEASON OF USE	BLM	USFS
Pine Valley, Buckhorn/ North Simpson Parks	AY	100%		142		1/1-12/31	341	
Crescent Valley								

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